1888.

Annual Report
ON THE HEALTH
OF THE
Rural Sanitary District
OF THE
ISLE OF WIGHT.

BY

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ANNUAL REPORT

ON THE

HEALTH OF THE RURAL SANITARY DISTRICT OF THE ISLE OF WIGHT,

For the Year 1888.

To the Members of the Isle of Wight Rural Sanitary Authority.

Gentlemen,

I have the honour to submit to you the following Report on the Health of your District in 1888, arranged, as in previous years, under the Headings :—

1. Vital Statistics.
2. The Sanitary History of the Year.
3. The Sanitary State of the District generally at the end of the Year.

1. VITAL STATISTICS.

Population.

In the Isle of Wight Rural Sanitary District the excess of births over deaths during 1888 was 238, which represents the *natural* increase of the population. It was 347 in the previous year. The *actual* increase of the population was 51, or 187 less than the natural increase, it being estimated the population of the Isle of Wight Rural Sanitary District was 28,355 in the middle of the year.

Births and Deaths.

There were 730 births registered during the year. The male births numbered 364, and the female births numbered 366. 50 of the births, 25 males and 25 females, were illegitimate. There were 490 deaths registered during the year. The male deaths numbered 278, and the female deaths numbered 212.

In each quarter the births and deaths were as follows :—

	Births.			Deaths.		
	M.	F.	Total.	M.	F.	Total.
1st quarter	96	88	184	83	83	166
2nd ,,	77	97	174	70	61	131
3rd ,,	84	80	164	64	40	104
4th ,,	107	101	208	61	28	89
	364	366	730	278	212	490

Birth-rate and Death-rate.

Assuming the correctness of the estimate of population, the birth-rate in 1888 was equal to 25·7, and the death-rate was equal to 17·3 per 1,000. 71 persons who did not belong to the District died within it, and deducting these the death-rate proper is reduced to 14·8 per 1,000, which is higher than that of preceding years.

Births and Deaths in six years.

The births and birth-rate and deaths and death-rate in your District during the past six years have been as follows:—

	Births.	Birth-rate.	Deaths.	Death-rate.
1883	776	27·5	429	15·2
1884	834	29·6	386	13·7
1885	769	27·2	439	15·4
1886	861	30·4	445	15·7
1887	798	28·1	451	15·9
1888	730	25·7	490	17·3

Birth-rate and Death-rate in England and Wales.

In 1888 the birth-rate in England and Wales was 30·6 and the death-rate 17·8 per 1,000 of the population estimated to be living in the middle of the year. The birth-rate was 2·9 below the mean annual rate in the ten years 1878-87, and was 0·8 below the birth-rate of 1887, which was the lowest rate for fifty years. The death-rate, which had ranged in the seven preceding years from 19·6 in 1882 to the then unexampled low rate of 18·8 in 1887, further declined in 1888 to 17·8, a considerably lower rate than that recorded in any previous year of civil registration, which commenced in 1837. The recorded death-rate in each of the eight years, 1881-88, has been lower than the rate recorded in any year prior to 1881. The mean annual death-rate in the first eight years of the current decennium (1881-90) did not exceed 19·1, while the mean rate in the preceding decennium (1871-80) was 21·4. This remarkable decline in the death-rate implies that more than a half-million persons were alive in England and Wales at the end of 1888, who would have died before that date had the rate of mortality been the same as that which prevailed during the previous ten years (1871-80). The death-rate among the people of England and Wales resident outside the boundaries of Urban Sanitary Districts was equal to 16·7 per 1,000 in 1888. The mean death-rate of the extra urban population in the seven years (1881-87) was 17·5 per 1,000.

Comparison of the Birth-rates and Death-rates in the I. W. R. S. D. with those of England and Wales.

The birth-rate in the Isle of Wight Rural Sanitary District in 1888 was 4·9 below the birth-rate, and the death-rate was 0·5 below the death-rate of England and Wales, or, deducting the deaths which occurred among persons who did not belong to the District, 3·0 below the death-rate of England and Wales. Comparing the death-rate of the Isle of Wight Rural Sanitary District with that of the extra urban districts of England and Wales, we find it was 0·6 above the average, or deducting the deaths of strangers, 1·9 below the average. As compared with the average death-rate in England and Wales, and with that in small towns and country parishes, the death-rate in the Isle of Wight Rural Sanitary District during the last six years was as follows:—

	England and Wales.	Rural Districts.
1883	4·3 below the average.	2·5 below the average.
1884	5·9 ,,	3·7 ,,
1885	3·6 ,,	2·1 ,,
1886	3·6 ,,	2·1 ,,
1887	2·9 ,,	1·3 ,,
1888	0·5 ,,	0·6 above the average.

Male and Female Death-rate.

The death-rate of males at all ages was 18·4 per 1,000, and of females 15·4 per 1,000.

Infant mortality.

79 infants died before they were a year old. The rate of infant mortality, measured by the proportion of deaths under one year to registered births, was equal to 108 per 1,000. In the preceding year it was equal to 87 per 1,000. The corresponding rate in England and Wales in 1888 was equal to 137 per 1,000. 119 children, or 24 per cent. of the deaths, died under 5 years. 173 persons, or 35·3 per cent. of the deaths, died at or over 60, of whom 60 were between 60 and 70, 65 between 70 and 80, 43 were between 80 and 90, and 5 were over 90. A farm labourer of Apse Heath was 94 when he died, and this was the greatest age at death registered in 1888.

Mortality of the aged.

Deaths of strangers to the District.

71 persons, who did not belong to it, died or their bodies were washed ashore in the District, of whom 37 died in the Workhouse, 30 in the Hospital for Consumption at St. Lawrence, 2 were drowned—one while boating off Shanklin, another, one of the crew of the "Sirenia" wrecked off Atherfield, by the capsizing of the lifeboat—and two dead bodies were found on the shore, one at Hampstead, the other at Ladder Chine.

Deaths by violence.

19 persons died a violent death—1 on the railway, 1 by a blow from a chain breaking on board ship at the Motherbank, 2 men were thrown from carts, 1 from a horse, 1 fell from a scaffold, 1 fell from a ladder, 1 was crushed between the rollers of a hauling apparatus on the cliff at Atherfield, 1, a labourer of 66, committed suicide by hanging, and 10 were drowned—2 lads of 16 were drowned while bathing, 1, a boatman, by falling out of a boat, 6 by capsizing of boats, 3 of whom—2 lifeboatmen and a rescued sailor—by the lamentable capsizing of the lifeboat at the wreck of the "Sirenia," and 1 body of a man was washed ashore at Ladder Chine, who probably perished by the sinking of a ship after collision in the Channel. All those who died by violence in 1888 were males. The deaths were equal to 3·8 per cent. of the deaths from all causes, and to a rate equal to 0·67 per 1,000 of the population. The corresponding rates for England and Wales were 3·3 per cent., and 0·58 per 1,000. The percentage of deaths from violence in your District during the past six years was as follows:—

1883.	1884.	1885.	1886.	1887.	1888.
3·0	2·5	3·4	3·3	4·2	3·8

Mortality from certain diseases. Zymotic diseases

The 490 deaths from all causes included—

2	attributed	to	scarlatina.
16	,,	,,	measles.
6	,,	,,	diphtheria.
15	,,	,,	whooping-cough.
5	,,	,,	fever.
2	,,	,,	diarrhœa.
46			

The 46 deaths attributed to these principal zymotic diseases were equal to a death-rate of 1·6 per 1,000, and were 9·3 per cent. of the deaths from all causes. The corresponding rates for these diseases in 1887 were 0·88 per 1,000, and 5·5 per cent. The rate in England and Wales in 1888 was equal to 1·7 per 1,000. The mean annual death-rate from the principal zymotic diseases in England and Wales, which had been 3·95, 4·15, and 3·38 per 1,000 respectively in the three decennial periods 1851-60, 1861-70, and 1871-80, did not exceed 2·35 in the first eight years of the current decennium, 1881-90.

Phthisis.

62 deaths from phthisis, or consumption, were registered in your District in 1888. Of the 33 deaths in the Consumption Hospital several were registered as having occurred from general tuberculosis, and these I have included under the heading of phthisis. Of the 32 persons who thus died from phthisis in that institution 29 were strangers to the Isle of Wight. Two deaths occurred in the Workhouse among Islanders who were not resident in your District. The death-rate from phthisis was 2·1 per 1,000, or, deducting the deaths of 31 persons who did not belong to your District, 1·0 per 1,000. The percentage of deaths from phthisis to all the deaths was 12·6, or, excluding strangers, 6·7 in 1888.

The mean percentage of deaths from phthisis to all the deaths in England and Wales for the ten years 1878-87 was 9·3.

Lung diseases.

84 persons, two of whom did not belong to the District, died from other pulmonary affections. This would be equal to a death-rate of 2·9 per 1,000, the mean death-rate for England and Wales being 3·3 per 1,000.

Heart disease.

There were 40 deaths from heart disease, one of which occurred among those persons who died within but did not belong to the District. Heart disease killed, therefore, 1·4 per 1,000 of the population. The mean death-rate from heart disease in England and Wales is 1·3 per 1,000.

Cancer.

Cancer caused 13 deaths, equivalent to a death rate of 0·45 per 1,000, or 3·0 per cent. of all the deaths among residents. In England and Wales the mean percentage of deaths from cancer was 2·7 from 1878 to 1887.

Scrofula.

To scrofula, or tuberculosis, 9 deaths, 2·1 per cent. of all the deaths of residents, were attributed. In England and Wales 3·6 per cent. was the mean proportion of the deaths from scrofula, or tuberculosis, to all the deaths during the ten years 1878-87.

The English Death-rate in 1888.

In 1888 the English death-rate was abnormally low, a smaller proportion of the population having died than probably in any previous year. This exceptionally low death-rate may be in part accounted for by a wet summer, a high subterranean water line being associated with a low death-rate as a low water line is with a high death-rate; but the English death-rate has been slowly diminishing, a fact to which I have called your attention from year to year. While the diminishing death-rate in England and Wales is greatly due, no doubt, to the application of the Sanitary Acts by a large number of Sanitary Authorities and to the improved habits of the people, a diminished marriage-rate is not without effect upon the death-rate. The diminution of the death-rate is especially marked during the earlier age periods, and this is consequent upon a lower birth-rate. Marriage being less frequent, there are fewer infants in the population and fewer deaths from infantile disorders, and especially from diarrhœa.

The Isle of Wight Death-rate in 1888.

Your District did not participate in the reduced death rate of England and Wales in 1888. I am not furnished with the returns of marriage, but I conclude they are less frequent than in England and Wales, as the birth-rate of your District is considerably below the average birth-rate. This should assist the death-rate more than it appears to have done in recent years. There were many deaths among children from measles and whooping-cough in 1888, and from diphtheria in the years immediately preceding, which helped to raise the death-rate; but if the proportion of children in the population were larger, the mortality from these diseases would have been proportionately greater. With an exceptionally good climate, with an absence of extreme poverty, and in an area not densely populated, I am of opinion the death-rate is higher than it should be among a people pursuing healthy occupations.

(A) Table of Deaths during the Year 1888, in the Rural Sanitary District
and showing also the Population of such Localitie

Names of Localities adopted for the purpose of these Statistics; public institutions being shown as separate localities.	Population at all Ages.		Registered Births.	Mortality from all Causes, at subjoined Ages.								Smallpox.
	Census 1881.	Estimated to middle of 1888.		At all ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 60.	60 and upwards.		
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13
NEWPORT.			158	76	16	5	7	5	18	25	Under 5 .... 5 upwds.	...
WORKHOUSE.	405			80	6	5		1	14	54	Under 5 .... 5 upwds.	...
PARKHURST PRISON.	1159			13					9	4	Under 5 .... 5 upwds.	...
PARKHURST BARRACKS.	618			3			1	1	1		Under 5 .... 5 upwds.	...
COWES.			62	33	8	4	1	1	12	7	Under 5 .... 5 upwds.	...
RYDE.			186	105	23	16	6	6	23	31	Under 5 .... 5 upwds.	...
GODSHILL.			149	78	10	3	5	9	20	31	Under 5 .... 5 upwds.	...
ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.	126			33				11	22		Under 5 .... 5 upwds.	...
CALBOURNE.	6396		175	69	15	7	4	5	16	21	Under 5 .... 5 upwds.	...
TOTALS			730	490	79	40	24	39	135	173	Under 5 .... 5 upwds.	..
The subjoined numbers have also to be taken into account in judging of the mortality of this Division of the Sanitary Distri												
Deaths occurring outside the division or district among persons belonging thereto .											Under 5 .... 5 upwds.	..
Deaths occurring within the division or district among persons not belonging thereto				71	4	3		12	32	20	Under 5 .... 5 upwds.	..

SLE OF WIGHT, Classified according to Diseases, Ages, and Localities,
he Births therein during the Year.

ORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.

Scarlatina.	Diphtheria.	Croup (not "Spasmodic")	Whooping Cough.	Cont. Fevers.			Diarrhœa and Dysentery.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Ague.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All Other Diseases.
				Typhus.	Enteric or Typhoid.	Other or doubtful.												
15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.
	1														10			9
									1					7	11	8	2	25
		2																
										1				4	8	4		32
														1	2	3		7
		1																
														1				1
															6			5
					1							1		1	4	4	3	7
1	1		7				1								7			17
			1		2		1					1		6	13	11	3	27
	1														3			8
	1				1				2					7	6	3	8	37
														32				1
			6							1					4			12
1	2		1		1							2		3	10	7	3	16
1	3	3	13				1			1					30			54
1	3		2		5		1		3	1		4		62	54	40	19	173

		1								1				31	2	1	4	27

2. THE SANITARY HISTORY OF THE YEAR.

Zymotic diseases.

The year 1888 commenced with catching disorders prevalent in your District. Scarlet fever was present at Bonchurch, Lowtherville, Steephill Cove, and Yarmouth; there was also a case at Whitwell, and another case at Brooke. Measles was present at Wootton, Yarmouth, Wellow, Brooke, and in the neighbourhood of Sandown. Whooping-cough was present at Gurnard, Whippingham, and Haylands. Diphtheria was still epidemic at Freshwater, and there were cases of this disease at Yaverland and Yarbridge. There was also a case of enteric fever at Shalfleet, and what was apparently another case at Thorncross. As the year grew certain of these diseases advanced, holding tenaciously to some localities and leaving others, it may be to reappear in them later in the year, while fresh neighbourhoods were invaded from your District or the towns.

Scarlet Fever.

At the beginning of the year there was a case of scarlet fever at *Whitwell*, a girl having been wilfully sent from service in Ventnor to a crowded home in that village. Owing to the extreme vigilance exercised by the Vicar of Whitwell, a member of your Authority, the disease spread only to one other person in the house; but a child who came into contact with a member of the family contracted it. The child of a woman whose husband was employed upon a farm at *Wroxall*, from which milk was sent to Ventnor twice a day, had scarlet fever in January. This woman worked at the house in Ventnor from which the Whitwell case was sent, and travelled to and fro by rail every day. I mention this as an example of the manner in which disease may be spread. There were no other cases at that time, but Wroxall was closely watched, and towards the end of the month two or three mild cases were discovered; and in February there was an outbreak apparently due to some child, whose case was not known, having returned prematurely to school. While visiting houses in which there was scarlet fever at the end of February and the beginning of March, I found instances in which no precautions whatever were being taken. In May a young man who delivered meat in Ventnor went home to *Whiteley Bank* with scarlet fever, and eight children in the house one after the other took the disease. In August a family at *Winstone* were down with scarlet fever, the disease having been contracted, apparently, from the family at Whiteley Bank. At the close of December, 1887, scarlet fever was introduced into *Bonchurch*. The first case occurred at a laundry, the contagium being apparently conveyed in soiled linen from Ventnor. When the Bonchurch Schools were re-opened in January after the Christmas holidays, the schoolmaster observing the hands of the children of one family were rough as if peeling after scarlet fever, very properly sent them home. They had had the disease, but were not attended by a medical man. The mother nursed a lying-in woman and conveyed the poison to two of her children. At the end of 1887 several children were convalescent from scarlet fever at *Upper Ventnor* and *Lowtherville.* In January a case occurred next door to one of the lately infected houses at Lowtherville. I heard no more of scarlet fever in this district until June, when two young women residing at Upper Ventnor, one of whom was employed at the Ventnor Post Office, contracted the disease. In July a boy employed at the bookstall at the Ventnor Railway Station had scarlet fever, and several children attending schools in Ventnor were down with it at Lowtherville. There was much disease among animals at Lowtherville at this time, and large numbers of pigs were killed and buried in the gardens near the houses. The outbreak died down in August, and there was no fresh case until October, when a young man working as a carpenter in Ventnor had scarlet fever. In November another lad at Lowtherville, who was a newspaper errand boy employed at the bookstall, Ventnor Station, had the disease. At the end of May a servant was sent home from her situation in Ventnor, to a labourer's cottage at *Chale*, suffering from scarlet fever. Two of her brothers contracted the disease. In July and August there were several cases at *Ashey*. The outbreak commenced in June in connection with the Ashey Schools. At the beginning of May my attention was called to a case or two of scarlet fever at *Binstead,* the earliest of which occurred in the middle of April. Upon inquiry I found there had been several mild cases of illness not recognised as scarlet fever, but which, it was evident to me, were cases of that disease. As scarlet fever increased among the scholars, I recommended the closing the Binstead Day and Sabbath Schools. They were re-opened in July, and nothing more was heard of the disease until August, when there was a fresh outbreak after a school treat. The cases were carefully isolated, and no child was permitted to return to school without the certificate of the Poor Law Medical Officer. Scarlet fever disappeared from Binstead in September. A child attending the Binstead Schools was ill with scarlet fever at the Coastguard Station, *Fishbourne,* towards the end of May. Owing to the extreme and intelligent care taken by the parents in following the directions given, the disease did not spread. In November children attending the Bettesworth Road Schools had scarlet fever at *Haylands*. Only two or three families were infected, and the disease did not spread there. In March there was a case of scarlet fever at *Whitcombe*. The child attended the Carisbrooke Infant School. There were a few mild cases at *Carisbrooke* about the same time, the disease having been introduced, apparently, from Newport; but it did not spread in connection with the schools. The epidemic of scarlet fever at *Yarmouth* which commenced in 1887 continued through January and then died out. The incidence of the disease was especially felt in Mill Terrace, where almost every child was affected. There was a case at *Niton* in December. The poison was apparently conveyed from Ventnor by a relative. In another case to which attention was called the symptoms did not seem to me to correspond with those of the disease.

Notwithstanding the very large number of cases of scarlet fever in your District in 1888, there were only two deaths, one at Yarmouth from scarlatina dropsy, and one, the case of a child whose illness was complicated by an attack of convulsions, at Haylands.

Measles.

Measles was far more fatal, 16 deaths having occurred from it. The epidemic of measles, which took its rise at Cowes in 1887, has affected the whole of the Isle of Wight. In the early part of 1888 it was severe at *Binstead*, the schools were closed, and deaths occurred. In March there was a death from measles at *Haven Street*, and there were many cases both there and at *Haylands*. In 1887, measles was introduced into Sandown directly from Cowes. It rapidly spread to *Lake*, *Gatten*, *Shanklin*, *Alverstone*, and *Newchurch*. It became so severe that in the Spring the schools were closed at Gatten and Newchurch. Cases occurred also at *Wroxall* and *Lowtherville*. At the beginning of the year measles was declining at *Wootton*, when a death occurred there. It died out in *Wellow*, *Yarmouth*, and the west of the Island in January; but in March it became prevalent in the Newport district. A death occurred at *Carisbrooke* at the beginning of April, and there were many cases in Carisbrooke, *Whitcombe*, and the neighbourhood. In April and May there was an outbreak of measles in the *Workhouse*, and six children died from it.

Whooping-cough.

Whooping-cough was widely prevalent in your District during the year, but it was not particularly fatal excepting at *Freshwater*, where there were seven deaths. There were in all fifteen deaths from whooping-cough, three of which occurred in one house at *Haylands*, where the sanitary conditions were very bad, and the drinking water was polluted. It prevailed at *Binstead* and *Haylands* early in the year, and at *Freshwater*, *Brading*, and *Lake* in the Autumn. In the centre of your District it was present in a mild form both in the Spring and Autumn.

Diarrhœa.

There was very little diarrhœa in the Isle of Wight last Summer, and only two deaths were registered as having occurred from it. One was the case of a man over 90, who really died from old age; and the other was an infant of five months, who died at Brading from infantile diarrhœa, the result of feeding with farinaceous food, the cause of so much infantile sickness.

Enteric Fever.

Five deaths were registered as having occured from typhoid fever, but there were, I believe, other deaths from this disease. In June a servant girl was sent from Shanklin to her parents' home at the Coastguard Station, *Bembridge*, suffering from what proved to be enteric fever. The case was not at first recognised, and precautions were not taken. The disease was contracted by a brother and sister, the latter of whom died early in July. A woman who nursed these cases also contracted the disease. She was nursed in her turn by her sister-in-law, who took enteric fever and died at the beginning of August. In June a girl died at Upper Ventnor, a week after she was removed there from her place of service at *Blackgang*. She became ill two or three weeks after spending a fortnight in Newport. She appears to have been a good deal on the river during her holiday, and was at the Cement Mills frequently. Early in May a child of 9 died at *Brighstone*. This was one of two cases of enteric fever among the girls attending the Parochial Schools. They were taken ill on the same day at the end of March. A fortnight previously they had both been to a closet used by a child suffering from frequent diarrhœa. This child, who lived at *Thorncross*, had fever and died. A sister, who had come home to nurse another sister, subsequently had diarrhœa and fever and died. Four other members of this family had previously been laid aside for various periods, extending to five or six weeks, with diarrhœa and fever. They obtained their drinking water from the polluted stream. In May a woman died in the Avenue, *Gurnard*. This was one of fourteen or fifteen cases, the first of which occurred in February, in four or five houses. In previous years there had been cases of enteric fever in these cottages. The water supply is from soak wells into which the rain-water is turned. The closet drains passed close to the wells, and leaked. The closets had no flushing arrangement. The cesspits and closets were unventilated. In some cases the cesspit was within 8ft. of the well. Some of the closet drains were made of agricultural "but" pipes. In one case the pipes of the closet drain were broken, and the sewage passed into the well of the next house, through the pipe which conveyed the rain-water to it. In August two other cases occurred. In April there was a case of enteric fever at *Thorness Farm*. In 1886 and 1887 there had been cases of fever at the same house. The drinking water brought for some distance in pipes from a soak well in a gravel pit was polluted because, when it was found the soak well was not sufficient to supply two dairies and other houses, the supply pipe was connected with a shallow pond, which was daily fouled by cattle. In July there were two cases in a labourer's cottage at *Street Place*, in the *Calbourne* District. The people drank from a soak hole which was polluted by the water of a pond, into which the drainage from a farmyard passed. In September a child was down with typhoid in the Back Lane, *Brading*. The origin of the disease was not clear, but a closet without water service and connected with the sewer was inside the house. A case occurred at *Horsebridge Hill* in

October. The walls of the house were riddled with rat holes, through which sewer gas passed. Two lads were ill at *Dodnor* on the Medina, in September. The house was insanitary: the drains were not disconnected, the unventilated soil pipe passed down within the house, a housemaid's sink outside the room in which the patients slept connected directly with the soil pipe, and the drinking water was drawn from the cistern which supplied the closet. A fortnight before their illnesses commenced, the two boys were catching eels in the mud of a stream down which the sewage of Parkhurst Prison and Barracks passed, and which certainly carried with it a year before, if not more recently, the poison of enteric fever. There was a mild case at *Haven Street* in December. A sister had come home from the Midland Counties convalescent from typhoid fever about three weeks before it developed, but no clinical connection between the two cases could be traced. There was also a case at *Niton* in December, the origin of which could not be distinctly traced. The patient worked in the Undercliff, a most likely place to pick up enteric fever if people are careless about the water they drink, and the water and sanitary arrangements of his home were not satisfactory.

Diphtheria.

At the beginning of 1888 there was diphtheria contracted at Newport, at *Chilton*, and there were other cases at *Yaverland* and *Yarbridge*, but the disease did not spread in these places. The usual Autumn outbreak at *Freshwater* died down towards the close of 1887, and there were no fresh cases until the middle of January, 1888, when two servants at Heathfield, in the School Green district, were attacked. In November, 1887, a page boy at Heathfield, a house situated on the clay in an insanitary state, had the disease, and, being convalescent, left the Island at Christmas. On January 28th the gardener at Heathfield became ill. On February 10th his wife took to her bed, and died on the 20th. A woman who went to the house to assist during her illness was taken ill on February 25th. A child of the woman who died was taken home by a neighbour on February 14th, and on February 17th a member of this family attending the Parochial Schools was attacked. On February 7th a cook who was engaged at Heathfield was laid aside; and on February 17th her husband took the disease, and died on the 19th. At the end of February there was a woman ill with diphtheria at Norton Green. I could not trace the source of the poison, but there were accumulations of filth from pigs and cows near the house; and two of her children had diphtheria in November, 1887. Neither could I trace the origin of a case which occurred in March in Church Place, Freshwater. I heard of no other cases until late in the Autumn, when throat affections became prevalent at Freshwater. I found nothing definite, however, until December, when some severe cases of diphtheria occurred in Tichborne Terrace, Middleton, in cottages into which the contents of the privy vaults leaked. At the same time there were several mild cases in the Palmerston Road, Freshwater Gate, in cottages the sanitary arrangements of which were bad. On January 8th a girl of 14, living in the New Road, *Wroxall*, was attacked with diphtheria, and died on the 11th. There were four other cases in the same family. The drains were not disconnected, the water was polluted, and there was a disgusting stench from an open cesspit in the next garden. In February there were three cases in an adjoining house. The drains were not disconnected, and the unventilated leaking cesspit was within 15ft. of the drinking well, which was polluted. In February two cases occurred in a cottage situated opposite the Board Schools, which drained into the stream. On March 5th a child died in a damp jerry-built cottage in Castle Lane, and there were two other cases in the family. This was the kind of dwelling in which one would expect to find diphtheria. Situated on the Gault, with rain-water stack pipes ending 6ft. from the ground, with an open polluted well, with a foul midden privy, and slops thrown from the door and windows standing in puddles about it because they could not soak into the clay, and waiting to be washed into the drinking well when rain came. In March, also, a young man who had previously cleaned out a very foul cesspit, was ill with diphtheria at *Niton*. On March 3rd a girl of 9 was attacked in *Gunville*. The house is situated in what is known as Gunville Back, or Gunville Place. Close to the door, but on the next premises, was a deposit of filth from a gutter which took the slops of four or five houses above, and which stank horribly. In front of the house is the foul ditch which serves as a sewer for Gunville Back. The whole atmosphere seemed loaded with the stench of privies, pigsties, and putrid slops. As in all the other houses, the only water supply is unfiltered and badly stored rain-water. A sister of the patient subsequently took the disease and died on April 16th. There were a great many other cases of a milder type in Gunville Back. Some of these cases were visited and nursed by friends living in Gunville Lane, and there were several mild cases there. There were cases of bad throat in the neighbourhood of Alverstone and Bordwood associated with an outbreak of measles in the early part of the year. In February there was a girl ill with sore throat in a thatched stone cottage just on the outskirts of *Bordwood Copse*. Her hands and feet peeled subsequently. In March her brother had diphtheria. The soil is sandy, and the house is dry, but the stone of which it is built is porous, and after rain the paper on the walls becomes mouldy in one or two places. Within a stone's throw of this cottage, four children in one family died of diphtheria in 1884. In May a child died at *Fishbourne*. The house drainage stagnated in a ditch near which he was in the habit of playing. A sister returned home in July, and she took the disease. There were three cases in June in a damp stone cottage with unguttered roof, at Ninham Lane, *Binstead.* There was a closet without water service, and an untrapped drain communicating with the unventilated cesspit close to the back door, and the stench of sewer gas was very perceptible in the house. The uncovered reservoir through which the drinking water flowed was very foul. In May a child attending the Shorwell Schools, and living at *Bexfield*, near *Kingston,* in a new cottage on the Greensand, was laid up with a bad throat. I heard subsequently there had been several cases of bad throat about this time among the cottagers of Shorwell. At the end of June his brother was down with diphtheria, and a week later his mother was attacked.

Connection between Scarlet Fever and Diphtheria.

As you will have observed, diphtheria was associated with scarlet fever in several places in your District in 1888. In previous years outbreaks of diphtheria have followed visitations of scarlet fever, and persons who had suffered from scarlet fever were often the first attacked by diphtheria.

Certificates of Death.

In the present, as well as in previous annual reports, I have casually referred to the causes of death being occasionally incorrectly registered. It has been my duty to do this, because the medical man in attendance has informed me he was in error, or because of facts within my own knowledge. Some persons seem to regard a medical certificate of death as infallible, a belief which does not exist among those conversant with disease. Subsequent and better marked cases of zymotic disease as, for example, cases of diphtheria, often throw considerable light upon those which have preceded them.

Discovery of Zymotic Disease.

Upon the discovery of the presence of a catching disorder, either by direct information or indirectly, measures have been taken as quickly as possible to limit its spread. I have to tender my acknowledgments to several members of my profession, with one or two of whom I am not acquainted, who invariably inform me when they are called to cases of this character. Other medical men appear to have a strong objection to make these cases known. Engaged as I am in the active practice of my profession, I find no difficulty when the friends do not object, and their objections are generally easily overruled, in rendering the Medical Officers of Health outside my district every assistance. I am also greatly indebted in this matter to many of the clergy and masters of primary schools, and to members of your Authority.

Compulsory Notification of Disease.

In order to prevent the spread of disease it is essential to know of its existence. Too often this does not happen until it has a firm hold of the District, when comparatively little can be done. The compulsory notification of disease, should it become a legal obligation, will prove one of the greatest aids preventive medicine has had. Too much must not be expected from it, however. There will always be a certain number of mild unrecognised cases which will spread the disease, and convalescents will be permitted to get about and return to school too soon, until certificates from the Medical Officer of Health, or some medical man acting for him, as at Binstead in connection with the outbreak of scarlet fever in the late Summer of the year under review, are compulsory in every case. Convalescents, too, will continue to be sent down to the Isle of Wight, and to other health resorts, while they are still capable of transmitting the disease from which they have suffered, until the word "wilfully" is omitted from sec. 126 P.H.A. 1875.

Isolation.

To prevent the spread of communicable disease when discovered it should be at once isolated. This is no simple matter when it occurs in a small cottage home, or in a family living in lodgings. Even when a separate room can be found for the patient, the nurse is usually the person who is in most intimate contact with the other members of the household. I have during the year used every effort to secure isolation, but sometimes it has been impossible to do anything. In one instance I found a case of scarlet fever in the same room as a woman who had been confined an hour before my visit.

Isolation Hospital.

I consider an isolation hospital in your District a sanitary necessity.

Spread of Diseases.

In my experience the ordinary epidemic diseases are spread at school more than in any other way; and, however inconvenient it may seem, I believe the financial interests of the schools themselves are best served by closing them as soon as two or three cases of scarlatina, or measles, or diphtheria are known to exist among the scholars. The Binstead Schools were closed at the beginning of the year on account of the epidemic of measles, and again in May, at my suggestion, because of the spread of scarlatina. I suggested the closing of the Newchurch Schools as soon as I knew measles was prevalent, and this was done.

Disinfection.

Disinfection must be perseveringly applied through the whole course of the illness, and when it has ceased some powerful germicide should be brought into intimate contact with every article likely to transmit the poison. The rooms occupied by the patient should be stripped of paper, and lime-whited and repainted, if possible. These precautions have been advised, and for the most part followed, to prevent its spread wherever communicable disease was discovered during the past year. Sulphurous acid gas is the agent employed in your District, but in many cases the application of heat, and especially in the form of heated steam, is desirable. It is satisfactory to know a committee has been appointed to obtain information with regard to a suitable portable disinfector for your District.

Purity of Air.

Experience has shown, that when certain communicable diseases are introduced into a neighbourhood they settle down and spread, particularly in those places where the sanitary conditions are bad, and where there are collections of filth giving off emanations which taint the atmosphere. Purity of air, therefore, is an important factor in preventing the spread of disease. You have had brought to your notice during the past year, as the summary of the Inspectors' books will show, a large number of nuisances, such as collections of filth of all sorts—foul ash pits, foul privies, foul pigsties, slaughter-house refuse, foul drains and ditches—which poison the air about dwellings. You have given directions, the effect of which has been the abatement for the time being of the nuisances complained of. But many of these nuisances are of old standing, and are brought before you again and again. It would be of extreme advantage to the public health if proceedings were taken under sec. 96 P. H. A. 1875, and if fines were inflicted in connection with many of the recurring nuisances of your District.

Recurring Nuisances.

Town Refuse.

Among the most dangerous collections of filth are the heaps of refuse from the towns. You have only to consider what these heaps may contain—the sweepings of sick-rooms, beds, old carpets, and even clothes used by the sick, paper stripped from the walls of rooms which may have been occupied by persons suffering from smallpox, scarlet fever, or diphtheria—to convince yourselves of the danger they may be to the public health. They are usually deposited, to save trouble, close to the highway, and sometimes near dwellings. I receive more complaints of this class of nuisance from the inhabitants of the towns from which the refuse comes than from the ratepayers of your District. A heap of town refuse from Ryde, deposited just within a field off Ninham Lane, was much complained of last year by persons driving past it. The farmer to whom the heap belonged was much troubled, and expressed to me his regret that he was not directed in the matter before the refuse was deposited. As in previous years, the refuse from Sandown deposited near the Fort was again in 1888 the cause of earnest complaint from the military authorities. If you would make regulations for the deposit of town refuse in your District, the Inspectors could easily ascertain the names of the town scavengers for the time being, and furnish them with copies of them.

Scavenging.

By availing yourselves of the powers you possess under sec. 42 P. H. A. 1875, to scavenge some of the more populous places, you would improve the sanitary state of your District.

Sewer Air.

Very frequently my attention is called to cases of malaise and obstinate depressing sore throat dependent upon the entry of sewer air into houses from sewers or cesspits, and sometimes to diseases of a more formidable character, as enteric fever and diphtheria, due apparently to the same cause. During the past year many disconnections have been made from old houses in which there was direct pipe communication with the interior, and the builders and owners of new houses have constantly had their attention directed to the importance of the subject. Perhaps there has been a greater advance in your District during the past six years in this respect than in any other.

Sewers.

Sewers with a good outfall, if properly constructed, flushed, and ventilated, and if there be no direct pipe communication between them and the interiors of the houses, are a powerful auxiliary in assisting to prevent the spread of disease by sweeping away filth from the neighbourhood of our dwellings.

Connections with the Sewer at Yarmouth.

By ordering the connection of the houses in Mill Terrace with the Yarmouth sewer you have caused to be abated a very serious nuisance of long standing on the foreshore of the harbour. It seems to require, too often, the leverage of disease to get things done. The incidence of scarlet fever on Mill Terrace was very heavy in 1888.

Binstead Sewer.

By carrying Binstead sewer to the sea within your District in 1888 you have conferred a permanent sanitary benefit upon that place, and have ended an old controversy which has occupied an immense amount of time that may have been more profitably employed. It is to be regretted there is no definite arrangement for flushing the Binstead sewer frequently.

Sewers not authorised by the Authority.

Every effort has been made during the year under review to secure the separate drainage of each new house, but in the absence of bye-laws your officers are powerless. Your Authority have interfered to enforce separate connections with your sewers; but this is of little importance, indeed it would be better for the public health if the connections with the sewers belonged, as the sewers do, to the Sanitary Authorities, and were made by them. It is not right that well-to-do people should be permitted to have the chance of inflicting the burden of their drains upon the community, a chance of which they will avail themselves, as is evident from the case of Fishbourne.

Sewerage of Newport.

In November I attended a Local Government Board inquiry conducted by Mr. S. T. Smith, C.E., respecting the scheme of the Corporation to discharge the sewage of Newport by one outfall into the estuary of the Medina, nearly the whole of which is within your District. The Board have decided it shall be chemically treated before it is discharged into the river.

The Sewage of Parkhurst Prison and Barracks.

A serious nuisance, concerning which you have more than once caused strong representations to be made, has recently been entirely abated by the completion of the sewage works at Parkhurst, as recommended by Col. Sitwell, R.E., the Engineer Officer in charge of the Isle of Wight district. I am greatly indebted to Mr. Watson, of the Works Department at Parkhurst Prison, for his courtesy and kindness in demonstrating to me the process adopted in treating the sewage. A small stream of lime and water and one of porous carbon and water flow into it from two reservoirs as it passes through an open portion of the sewer near the outfall. It then passes through a tank in which is a grating to keep back foreign bodies, lest they should enter the ram and sludge-press and injure them; then into subsidence tanks, where the precipitant is deposited as sludge, the effluent water flowing off into a filtering bed of gravel, sand, and carbon, at the bottom of which are 4in. drain pipes, which carry it off to the tributary of the Medina, by which it reaches the river. The sludge passes from the subsidence tanks into a sludge tank, and from thence to a ram, by which it is raised to a press in which it is pressed into cakes. These cakes are 2ft. square and 1¼in. thick, and their average weight is 36lbs. They are used as manure on the Prison farm, and are preferred by the bailiff to the ordinary farmyard manure. The sewage yields five tons of manure a week, and the manure is worth 20s. a ton. The carbon costs 3s. 6d. per diem. The annual cost of the works, it is estimated, will be £200. The population of the Prison and Barracks in 1881 was 1,777, and at the present time it is said to vary from 1,800 to 2,000.

Pure Water.

One of the most potent agents in the dissemination of certain diseases is water. For this reason it is essential that drinking water should not only be pure, but should be free from the possibility of entrance of the germs of disease.

Chemical Analysis.

Water proved by chemical analysis to be contaminated even by sewage, has been drunk with impunity for years, or for a lifetime; while other water in which chemical and microscopical examination failed to discover the slightest trace of impurity, has poisoned a whole community, and produced widespread disease. Chemical analysis is a confirmatory test of the wholesomeness of drinking water; it is not *the* test. Chemical analysis will prove the presence of impurity in water, but it will not prove its absence. The only true tests of the wholesomeness and safety of drinking water, are its source of supply and its surroundings. A dip-well, for example, is not a safe source of supply, because there is the possibility of the poison of disease entering it, either in connection with vessels dipped into it, or apart from them. It would seem almost incredible in these days of general enlightenment, but it is true, that some men seem to regard a chemical analysis as a sort of a fetish, and as settling the question of the fitness of water to drink, whatever its source may be. In my opinion a chemist has no right to pronounce water free from danger unless he knows all about the source from which it is derived. During the year it became my duty to lay before you a letter upon this subject from an eminent analytical chemist. In it he admitted that a glance at the source of supply would often be sufficient to condemn water, and render an analysis superfluous. Those who are conversant with these matters know that when a chemist pronounces water good, he intends that so far as his art is able to discover, it is good. Chemical analysis frequently affords valuable aid to the sanitarian. Disease may be present, the nature of which is uncertain; or because of a peculiar taste, or for some other reason, the innocence of drinking water is questioned, although it is apparently amply protected from danger. Analysis may prove the pollution of the water, and so the nature of the illness may be cleared up, or the taste or colour explained; and the sanitarian, placed on his guard, searches out the hidden and hitherto unsuspected evil. But, as regards new houses, it always seems to me to be an insult to common sense, to be treating preventive medicine with contempt, and to be trifling with the sacredness of human life to recommend that a certificate be granted under sec. 6 P. H. (W.) A. because the water is pure and abundant, when the well from which it comes is unprotected from surface soakage in a cultivated garden, or with drains or a leaking cesspit in near proximity in a porous soil. And yet this is being done year after year, because it is supposed to be no business of mine to go beyond the law which obtains in your District. I make it my business, however, to instruct the Inspectors to do all that it is possible to do to protect the water supply of a new house. It would greatly assist to this end if the builders were obliged to give notice before beginning to build. It often happens that a new house is completed before its existence is discovered by your officers, and then structural alterations are shirked because they involve extra cost.

Wells.

Probably there is no district of the same area in which the difficulties in obtaining good water by sinking vary so much. Our knowledge of the geology of the Isle of Wight is sufficiently accurate to determine with tolerable certainty where water can and cannot be found, and one often regrets the waste of money which occurs because people in their self confidence, believing there is no knowledge beyond their ken, and refusing to seek, or to accept skilled advice upon the subject, prefer to trust wholly to the well-digger, or to the diviner's rod. To supply two labourers' cottages at Great East Standen a well was bored nearly 200ft. without finding water. It was pointed out soon after the work was commenced that if the owners continued they would have to go 400ft. or 500ft. probably, but that some what south of the position they had chosen water would be found readily. In the end they abandoned their well, and going 150ft. farther south found abundant water of excellent quality within 25ft. of the surface. A similar occurrence happened at Great Pan, where a deep well was dug in the Tertiaries to supply a cottage situated near the edge of the Chalk. Had they sunk in the Chalk they would have found water.

Rain-water.

During the year 1888, as formerly, occupied dwelling-houses with no water supply have been reported to you. In cases where it would require more than the prescribed sum to provide other than a rain-water supply, you have not put sec. 3 P. H. (W.) A. 1878, in force, because you are in doubt if a rain-water would be considered a wholesome supply. I would venture to point out to you that you frequently certify houses for letting on a rain-water supply alone; and, by doing so, you in effect, though not in intention, favour the rich by facilitating the letting of building land, while the poor are left to suffer hardship. A double advantage is gained when the rain-water is collected, as the houses are made drier by the guttering of the roofs. To be rendered wholesome, rain-water must be filtered before it passes into the storage tank; and, if this be done properly, it is both effectual and inexpensive. If the storage tank is under ground, the rain-water is delivered first into a catchpit, from which an overflow pipe leads it into a filter, from which it passes into the tank. The filter is constructed like a "mid-feather" or "dipstone" trap, the slate or "dipstone" reaching to within about an inch of the bottom. At the bottom of the filter is placed 3in. of well washed sharp sand, above this is a 3in. layer on each side the slate of clean grit, then 2in. of clean pea gravel, then 2in. of hazel-nut gravel, then 3in. of larger gravel. A layer of charcoal may be added, if convenient. The advantage of the catchpit is that much impurity is deposited there, and it is not necessary, therefore, to cleanse the filter so often. If the tank is above ground, a substitute for the catchpit may be found, or the filter alone used. A rain-water tank should be sufficiently capacious to take all the water which falls. A circular tank, 7ft. in diameter by 9ft. deep, will hold about 2,000 gallons.

Town Water.

Wherever possible in the neighbourhood of towns the town supply should be extended to your District, under secs. 54 and 61 P. H. A. 1875. The Newport water is supplied to parts of Carisbrooke, to Shide, Fairlee, the Workhouse, and Parkhurst Prison and Barracks; the Ryde water is laid on to Haylands; the Sandown water to Lake; the Shanklin water to some of the houses in the Atherley, Wilton, and Landguard Roads, and to other houses in the immediate vicinity of the town; and the Ventnor water to Bonchurch, Steephill, Upper Ventnor, and Lowtherville. During the year nearly all the new houses and many of the old ones in these districts have had town water laid on. It is to the interest of the towns to extend their water supply to the out-lying districts, not only because it increases their income—I believe one-fourth of the income derived from the Newport Waterworks comes from your District—but because it helps to keep disease from their borders. There are more particularly three places which should be supplied with town water, Binstead, Gunville, and Horsebridge Hill, if practicable.

Gunville.

During the year 1887 a member of your Authority took the initiative in persuading you to open negotiations with the

Corporation of Newport for the supply of Gunville with water, under sec. 61 P.H.A. 1875. The terms offered were that your Authority should lay the pipes and provide a meter; that the supply should not be continuous, or longer than 8 or 10 hours daily; that a sum not less than £7 a quarter should be guaranteed, and that, after the first 140,000 gallons guaranteed, the charge should be 1/- per 1,000 gallons. This proposed arrangement pre-supposes delivery by standpipes similar to those in use at Whitwell. As there are one or two large laundries in Gunville to which it would be necessary to lay the water on, there would be some difficulty in adjusting matters under this arrangement. You virtually declined the offer of the Corporation, and during the past year you did not re-open the question. I would advise you to again negotiate with the Corporation of Newport with a view to obtain a supply of water for Gunville, as, unless you can show it is not possible to obtain a supply at a reasonable cost, you are clearly in default under sec. 299 P. H. A. 1875.

Lake.

During the year 1888 permanent improvements in connection with water supply were made in different parts of your District. The most important of these was the supply of Lake, where wells attached to houses certified during the past five or six years have become polluted from leaking cesspits, and irretrievably spoilt. From time to time there has been a good deal of disease at Lake—the wonder is there has not been more—and it is to be hoped, now that one of the causes of disease has been removed, this source of loss to the community will diminish.

Brooke.

Another very important undertaking was the extending the independent supply of Brooke House from the Upper Greensand to the village. This supply is not super-abundant, or the owner would, doubtless, generously have supplied it to all, as he has done to some who are not his tenants.

Wroxall.

Under your directions the Parochial Committee have carried out an improvement at Wroxall by continuing Mrs. Fallick's supply to a standpipe in the road, and by protecting it to the boundary of her land.

Fishbourne.

The public well at Fishbourne, which is very important to the people of that place, has been protected by the owner with clay puddle and cement, and by raising the head of it above the surface of the ground.

Milk.

Most people know that milk has been the vehicle of the dissemination of poisons which produce disease, and that epidemics of enteric fever, scarlatina, and diphtheria have arisen in connection with it. Our knowledge is not yet sufficiently exact to enable us to say positively in how many ways milk may cause disease. Microbes may be introduced directly into milk, as when it is diluted with water containing the poison of typhoid fever, or when the scales from the skin of a desquamating scarlet fever patient fall into it; or indirectly when, as seems to be proved, impure water is drunk by cows, the microbes pass into the milk without apparently affecting the animals. It is supposed by many, but controverted by others, that a local disease in cows which does not arrest the secretion of milk, produces scarlet fever in the human subject. Whether this be ultimately proved to be correct or not, the potentialities of milk to spread disease are so considerable, that it is the duty of sanitary authorities to give the greatest attention to the subject, and to do their best to protect the public health from the dangers which may attend the distribution of milk in their districts. During the year the dairies, cowsheds, and milkshops of your District have had attention given them, and so far as is known the dairies are all registered, although some may have escaped notice; but they have not been regularly and systematically inspected, and there are no regulations to guide either the dairyman and milk vendor on the one hand or the Inspectors on the other.

Bye-laws.

In March I attended a meeting of a committee of your Authority appointed to consider the question of bye-laws, but no conclusion was arrived at, as so few voted upon the two propositions submitted. These were :—1. That a few simple bye-laws be applied to populous places. 2. That bye-laws be applied to the whole District, and more severe ones to the populous places in it. This second proposition received most support, and was the recommendation made to you by the committee appointed to consider my annual report.

Inspection Work.

The Inspectors have furnished me with the following summary of their work :—

	WEST MEDENE.	EAST MEDENE.
Number of nuisances and other matters reported	350	297
,, ,, abated without final notice	201	156
,, final notices served	26	35
Houses reported unfit for habitation	—	—
Houses placed in habitable repair	1	3
Houses closed by order	—	—
Houses cleaned and disinfected	48	56
Legal proceedings taken under sec. 96 P.H.A. 1875	—	—
,, ,, ,, ,, 126 ,,	—	—
,, ,, ,, ,, 6 P. H. (W.) A.	—	—
Cases of overcrowding reported	1	1
Cases of overcrowding abated	1	1
Privy cesspools provided and properly constructed	41	23
Privies put on the pail system	56	18
Wells sunk and improved supplies of water obtained	57	35
Wells cleansed	12	15
Wells closed	—	—
Defective pumps repaired	4	6
Pumps provided	20	8
Houses drained and connected with the sewer	3	10
House drains repaired and trapped	48	34
Refuse accumulations from towns removed	—	2
Swine fever cases	—	4

Houses built and occupied in 1888.

WEST MEDENE.			EAST MEDENE.		
	With Certificate.	Without Certificate.		With Certificate.	Without Certificate.
Carisbrooke	4		Bembridge ..	3	
Freshwater	17		Brading	1	
Chale ..	2		Gatten	1	
Northwood ..	4		Shanklin ..	1	
			Wroxall	3	
			Bonchurch ..	1	
			Ventnor	2	
			St. Lawrence	3	
			Niton	6	
			Newchurch	1	
			Haylands ..	4	
			Haven Street	1	
			Wootton	1	
			Standen	4	
	27			32	

My acknowledgments are due to the Rev. E. W. Watts, M.A., for the following meteorological summary for 1888, taken from the observations of temperature and rainfall at Lugley House, Newport, about 44ft. above the sea level.

MONTH.	Maximum for Month.	Minimum for Month.	Mean Daily Maximum.	Mean Daily Minimum.	Mean Temperature.	Rainfall for Month.	No. of Wet Days.	Greatest Fall in one Day.
Jan. ..	51·0 on 22nd	19·9 on 30th	43·5	33·8	38·6	1·26	11	0·27 on 3rd
Feb. ..	52·8 on 6th	18·1 on 2nd	40·4	30·6	35·5	0·81	10	0·30 on 13th
Mar. ..	51·4 on 28th	20·5 on 2nd	44·7	33·4	39·0	3·97	20	0·55 on 8th
April ..	59·0 on 13th	27·8 on 6th	50·4	37·5	43·9	1·42	15	0·34 on 16th
May ..	70·0 on 23rd	30·4 on 11th	61·0	42·7	51·8	1·87	9	0·59 on 16th
June ..	80·1 on 25th	36·0 on 18th	65·2	49·5	57·3	2·28	17	0·43 on 27th
July ..	70·4 on 17th	40·8 on 13th	65·1	52·5	58·8	4·63	23	1·03 on 2nd
Aug. ..	80·0 on 9th	43·0 on 14th	66·8	52·4	59·6	1·83	13	0·83 on 28th
Sept. ..	74·8 on 15th	37·1 on 12th	65·7	47·7	56·7	0·94	10	0·32 on 29th
Oct. ..	65·0 on 27th	25·0 on 15th	56·2	38·8	47·5	2·21	11	0·80 on 29th
Nov. ..	57·1 on 16th	33·8 on 7th	52·8	44·9	48·8	5·49	23	0·79 on 12th
Dec. ..	58·8 on 6th	27·0 on 11th	48·3	40·2 **39·6***	44·2 **44·0***	2·31	17	0·40 on 27th

While I was away in December, the index of the minimum thermometer became deranged. Consequently no minimum temperatures were registered from the 26th to 31st inclusive. E. W. WATTS.

* *Approximate value determined by Mr. Aldridge.*

The total rainfall at Newport in 1888 was 29·02 inches, against 24·43 inches in 1887, 38·07 inches in 1886, and 29·32 inches in 1885. The number of wet days in 1888 was 179, against 141 in 1887, 202 in 1886, and 159 in 1885.

The Weather of 1888.

The weather of 1888 was so phenomenal, I have thought it well to append to this report some very valuable observations kindly made for me with that view by Mr. Edward G. Aldridge, F.G.S., F.R. Met. Soc.

3. THE SANITARY STATE OF THE DISTRICT GENERALLY AT THE END OF THE YEAR.

Health of the District.

At the close of 1888 there was less zymotic disease in your District than at the same date in recent years.

Diphtheria.

There were cases of diphtheria at Freshwater, the dying embers of the usual Autumn outbreak of the disease in that place.

Scarlet Fever.

There were convalescents from scarlet fever at Lowtherville and Haylands, and a doubtful case at Niton.

Enteric Fever.

At both Haven Street and Niton a patient was recovering from enteric fever.

Sanitary state of the District generally.

The general sanitary state of your District at the close of the year was similar to its condition at the end of 1887, as will be evident from the following brief account of the different localities; but I am pleased to be able to report permanent improvement in one or two places, as at Brooke and Binstead.

East Medene.
Bembridge.

Bembridge continues to grow, but its prosperity would be increased if it had a better water supply. The majority of its surface wells, being supplied by soakage from the surrounding soil, rapidly dry up in the absence of rain. Other wells sunk in the gravel deposited in shallow pockets of alluvial clay, also soon give out in dry weather; and the rain-water is indifferently collected and stored. The "north wells," which is supplied from a much deeper bed, is generally resorted to; but it cannot be said to be within a reasonable distance from many of the houses. At Lane End water is more abundant, but the wells, situated in cultivated gardens, are liable to pollution. Owners of new houses there have, in many instances, followed the advice given them to cement and clay puddle the upper portions of the wells, and to raise the heads of them above the surface of the ground; but the small additional expense of affixing pumps is not usually incurred. Complaints frequently reach me in Summer from visitors and others of stench from the sewer gratings at Bembridge. This nuisance has been considerably diminished by the erection of shafts; but I would point out again, that one great defect in your District is, that the sewers are either not flushed at all, or insufficiently flushed. Seymour Place and Harbour View require constant supervision, the former being an example of the evils which arise from absence of the control of efficient building bye-laws. The nuisance upon the foreshore and in the road from the drainage of premises into the highway storm-water drain continues. It is the duty either of the owner or of your Authority to connect the house with the sewer, an unauthorised branch of which runs close to it.* The sanitary state of Bembridge would be less satisfactory were it not for the oversight exercised by a member of your Authority, who is Chairman of the Bembridge Parochial Committee.

Brading.

The last remark applies equally to Brading and to the Chairman of the Brading Parochial Committee, who is also a member of your Authority. As was formerly so general in old towns, the drinking water of Brading is obtained mainly from old public wells, and you certify new houses in Brading proper on this supply. The majority of the new houses, however, are built upon the Chalk, and these are certified on a rain-water supply, as wells have to be sunk at least 50ft. in the Chalk before water is reached. Some of the inhabitants in the Back Lane obtain their water from a little pool fed by a perennial rivulet. This pool is polluted by all kinds of surface abominations. It would be a most simple and inexpensive matter to carry the water from the spring through pipes to a standpipe in Back Lane; but, in face of the general apathy, it is hopeless to expect that the generous lady who owns the spring will be approached with a view to secure this small but substantial sanitary benefit. Gradually the houses within the distance are being connected with the sewer; an important matter if the house drains do not communicate directly with the interiors of the houses, because, in the absence of efficient flushing, the sewers are better scoured. It is probable some means will be found of connecting certain of the houses which now foul the withey bed ditch with the sewer.* A great improvement has taken place in Back Lane since my last report was written, from the connections of the piggeries at the back of the slaughter-house with the sewer. Of the kind, it was one of the worst nuisances in your District before you at last brought pressure to bear for its abatement. The stench from some of the sewer ventilators in Brading is vile in the extreme.

Yarbridge.

The nuisance arising from the surface sewer at Yarbridge, discharging into an open gutter which deposited the sewage on the side of the railway, has been abated by the adjoining owner having covered up the gutter, and carried the sewer beneath the railway on to the marsh land beyond it. This makeshift arrangement must give place in time to a properly constructed sewer at Yarbridge.

Adgestone.

Adgestone seems somewhat out of the world, but it is within the Rural Sanitary District, and the people of Adgestone pay the sanitary rate. I have often reported to you that Adgestone is badly off for water, and that the chief source of supply is "Mew's well," an open dip-well by the roadside, which is fouled by impurities every time the wind blows when the cover is up, and every time a child or mischievous passer-by chooses to throw something in. Less expense than was incurred about the pump at Middleton would be sufficient to protect the health of many of the poorer ratepayers of Adgestone.* Some of the gutter nuisances at Adgestone require serious attention.

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* These connections with the sewer have been made.

Lake.

There are few more striking examples of sanitary neglect in your District than Lake presents. An improvement has been effected by your interference lately in connection with the wretched property on the west of the highway. The channel of the rivulet behind the houses has been deepened, and the overflow pipes of the cesspits have been cut off from it, but these pits soon fill and overflow, and the little stream carries sewage to the moor for cattle to drink. Lake ought to be sewered, but as the expense of doing so would be ruinous, it appears to me to be your duty to scavenge there under sec. 42 P. H. A. 1875. The independent water supply from Sandown will free the people from the necessity of using stinking water for domestic purposes.

Gatten.

It would be well if the Sandown water main were continued to Gatten, as the wells there become polluted from the leaking cesspits. Frequent complaints are made that the sewage from the Board Schools is washed on to the highway from the field on to which it is discharged. A sewer, which may be available for other houses, should be constructed to connect the schools with the Shanklin system.

Shanklin.

Some of the Shanklin houses in your District are supplied with water from the Shanklin Waterworks. The 6in. sewer in the Atherley Road is altogether inadequate for the drainage of the houses there; and that in the Wilton Road, although a 9in. sewer, is not efficient. Your attention has been frequently called to a constant nuisance from houses in the Languard Road, which drain into shallow cesspits. This nuisance has existed for years. It will be remedied by the sewer which it is in contemplation to make. The slaughter-house nuisance has been rendered less acute by running the blood and sewage into a ditch, from whence it passes to the stream, where it must prove highly dangerous; for if people do not drink from it cattle certainly do. I have frequently advised you to regulate slaughter-houses. You require, too, very badly the urban powers of secs. 47 and 49 P. H. A. 1875 at Shanklin, where the keeping of pigs is a perpetual annoyance to the ratepayers of your District.

Wroxall.

As I have previously explained, the subsoil of Wroxall being of clay, good well water can only be obtained from occasional pockets of gravel and sand. There is, however, abundance of most excellent water constantly flowing from the Greensand above the Gault, which, fouled by all sorts of abominations, passes through the village. It was in contemplation to make one or more of the Greensand springs the source of an independent supply, and this will have to be done sooner or later. In the meantime, as I have already reported, the Parochial Committee have brought Mrs. Fallick's supply to a standpipe in the street, and have protected the water from contamination on her premises by leading it through socketed earthenware pipes from her boundary, and have thus done all they could do in connection with this supply. Beyond her boundary sewage from the large cesspit in the meadow, which is a common nuisance, often flows over the site of the agricultural drainpipes through which the water passes to supply the people of Wroxall for drinking. That there should be such general laxity in obeying the law is less surprising, if it is so inefficient as to permit one or two men, living a couple of hundred miles away, to bar the sanitary well-being of a whole community because they happen to have lent money, for which they have excellent security, in Wroxall. As the clay subsoil will not suck it up, Wroxall runs much of its filth into the stream instead of adopting the usual method. You do not consider it necessary to scavenge Wroxall under sec. 42 P. H. A. 1875, and you do not make the bye-laws provided for under sec. 44 P. H. A. 1875; when the pollution of the stream is no longer permitted there remains, therefore, only the expensive alternative of sewering the place.

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* This work has been carried out.

Bonchurch.

Having regard to the fact that its sewage is discharged into disused wells and into crevices of the broken ground on which it stands, it is fortunate Bonchurch possesses in the Ventnor Waterworks an independent source of water supply, for it is dangerous to drink from any of the wells. The small house property built in the absence of building bye-laws, and which has occasioned your Authority and your officers so much trouble, was in a more sanitary condition than usual at the close of the year.

Lowtherville.

A colony of small houses on the north-west slope of St. Boniface Down, Lowtherville, also affords abundant evidence of inefficient sanitary control. It is supplied with Ventnor water from cisterns far too small, some uncovered within the houses, in which scarlet fever has been a not infrequent visitor, others outside, liable to be fouled by soot and the droppings of birds. Notwithstanding the independent water supply, not a cottage closet in Lowtherville, and scarcely one in the whole of your District, has a flushing arrangement. The houses drain into leaking cesspits, and pigs and other animals are kept so as to be a nuisance.

Upper Ventnor.

Your sewer at Upper Ventnor ought to be properly ventilated. Sewer gas finds its way into the houses through the house drains and stack pipes.

St. Lawrence and the Undercliff.

The future of the Undercliff, which is destined to be built over, is prejudiced by the mode of drainage. As it becomes more populated it will be unsafe to drink from any well. The Old Park Estate is an exception. The new houses on this property are provided with an independent supply of water from the Upper Greensand, the drains are disconnected, and the sewage is disposed of in tight cesspits and on the surface of the land. The enlightened and public-spirited owner of Old Park is anxious to do his duty, and knows how to do it. If you provided bye-laws other persons desirous of doing what is right would learn what to do. Several of the cottages at St. Lawrence, especially some near the church, are always more or less insanitary, particularly from pig nuisances.

Whitwell.

The independent water supply of Whitwell, due to Mr. Spindler's initiation and generosity, and to Mr. Granville Ward's assistance in giving the water, and which has been so ably and inexpensively carried out by Mr. Theodore Saunders, C.E., of Ventnor, is an example of what may be done, which may well be followed in other places. It is to be regretted your Authority did not deem it necessary to impress upon the owners of property at Southford the importance of continuing the Whitwell supply to that place. As it is situated on the Gault the filth of Whitwell does not easily soak away, and much of it finds its way to the stream by open and secret channels, and by unauthorised sewers. The old houses, built of porous stone and without damp courses, and some of the more modern ones, are damp. In one or two houses in the lower part of the village sickness seems to be always present. I have not been able to satisfy myself as to the cause of this. Possessing as it does an independent water supply available for flushing, it would be satisfactory if Whitwell could be sewered. It would be neither difficult nor very costly to do so, as there are meadows convenient for irrigation between Southford and Whitwell. I have to tender my acknowledgments to the Vicar of Whitwell, a member of your Authority, to whom its inhabitants are greatly indebted.

Niton.

Niton, which is also placed on the Gault, drains into the stream, the principal source of the Eastern Yar, and fouls it almost as it issues from the rock; but the sanitary state of Niton is better than it was. The independent water supply from the Upper Greensand, which a few houses enjoy, should be extended to the whole village.

Godshill.

Godshill, on the Lower Greensand, has abundant water, but the shallow dip-wells, loose steined with blocks of stone, are liable to pollution through the porous subsoil from the heavily manured garden soil, and from pigsties and privies. The sanitary condition of Godshill has been much improved since many of the closets have been reconstructed; but the condition of the houses and privies on one estate leaves much to be desired. By the order of your Authority closets have been reconstructed for pails, but no pails have been placed, and the last condition is worse than the first. It is astonishing that throughout your District so little care is taken to protect the wells by raising their heads above the surface of the land, and by cementing and clay puddling to keep out surface soakage, and that the small additional cost of affixing pumps is shirked. I have seen slop pails and buckets with excrement adhering to them dipped into drinking wells.

Newchurch.

By sinking deep wells in the Upper Greensand, on an outlier of which it stands, most excellent water can be obtained at Newchurch; but the wells are shallow surface wells for the most part. Pig and gutter nuisances are recurrent at Newchurch.

Arreton.

The long straggling village of Arreton with its thatched stone cottages, some of which are scarcely fit to live in, is, like Godshill and Newchurch, purely agricultural. The wells, sunk in the Lower Greensand, are shallow and unprotected. The condition of a ditch, which receives the slop and washing water of some cottages, is a recurring nuisance, which is abated after rain by the flushing of the contents of the ditch into the stream.

Haven Street.

Haven Street is one of those places with a clay soil which require the constant attention of the Inspector if gutter nuisances are to be kept down. As there are but few pockets of sand and gravel, the water supply is indifferent.

Haylands.

Haylands obtains its water from the Ryde supply; but there are several old wells still in use which yield water of doubtful quality. Your attention has been frequently called to the nuisances arising from the offensive trades of cat-gut making and tallow melting. You ought to possess the urban powers of sec. 112, 113, 114 P. H. A. 1875, relating to offensive trades. Part of Haylands is drained by a sewer which connects with the Ryde system. Another part, portions of Salter's Road and Colenutt's Road, is drained by a sewer which discharges into cesspits near Salter's Farmhouse, and which has been a nuisance to its occupants. This will be remedied by the extension of the sewer outfall, and the new cesspit you have sanctioned.* This sewer, joined by one from the next road, will have to be, at no distant date, connected with the Binstead sewer, which is its natural outlet. Although an independent water supply exists, the Haylands sewers are not flushed.

Binstead.

The wells of Binstead are surface wells, often in dangerous proximity to drains. Several houses in Ninham Lane and below it are supplied with water brought from a pocket in the clay in earthenware pipes for some distance. The mode of supply at each cottage is by filling a shallow open well, the overflow pipe, so to speak, from which fills the next well. There are no pumps, and the people dip from the wells. This supply would be a good one if it were properly protected. It is now liable to serious contamination. This supply may be made available for a much larger part of Binstead; but the simpler plan would be to extend the Ryde main, which is already brought to the boundary of the parish. The sanitary condition of Binstead has been permanently improved by properly extending the sewer to the sea. When it is carried to low-water mark* the site of the outfall should be marked, and some person should be appointed to keep it clear. All houses within the legal distance should be connected with the sewer. It is desirable you should possess the urban powers of sec. 47 P. H. A. 1875, for dealing with the pig nuisance at Binstead.

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* This work has been carried out.

Fishbourne. The sanitary state of Fishbourne has been improved by raising the crown of the public well, and protecting it from surface soakage with cement and clay puddle. While acknowledging this action of the owner of Fishbourne for the protection of the public health, one cannot but regret he should see fit to avail himself of his legal position, and throw the expense of the maintenance of the unauthorised sewers he has created upon the parish of Binstead. If other owners of property pursue the same course, and there is nothing to prevent them, a very grievous public burden will be inflicted; and, until you take action to prevent it, the risk of this burden being enormously increased is constantly present. The drainage arrangements of Fishbourne are very faulty, and will not be set right by simply extending the existing drains seawards.

Wootton. If the public spirit which prompted the effort to bring the water given by Mr. Holford into Wootton, which was ably done by Mr. Please, could be invoked in other villages, the effect upon the health of your District would soon be appreciable. This independent water supply cannot be made available beyond a certain area; but it is the area which includes the lower part of the village where it is most needed. The houses newly built on the old Newport Road in the upper part of Wootton stand on a bed of gravel capping the hill, from which good water is obtained. Should this new district increase, it will be wise to extend the sewer to it, if the wells, in the absence of bye-laws, are to be kept free from pollution.

Fairlee. The new houses built on the East Cowes Road just beyond the boundary of the Borough of Newport, at Fairyhole, are an example of the crowding of houses upon area in rural districts just outside towns, when sanitary authorities exercise no control over the erection of new buildings. These houses have Carisbrooke water laid on from the Newport main, but their curtilage is too small for the proper disposal of their sewage. Under these circumstances unauthorised sewers are formed, creating nuisances in the road gutters. It will probably be necessary to lay down a sewer in the Fairlee Road, and connect it with the Newport sewer from Cross Lanes.

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* This work has been carried out.

East Medene.
Gurnard.

Gurnard stands upon a bed of gravel, from which it draws its water, and into which it discharges its filth. It is not surprising, therefore, that enteric fever assumed epidemic proportions at Gurnard in 1888. It is impossible your Authority can realise the evils which arise from allowing watering places like Gurnard to develop practically free from sanitary control, or you would not accept the responsibility. Drains are carried close to drinking wells, and their position is forgotten; leaking cesspits are in close proximity to soak wells; instead of collecting it separately in tanks, the rain-water from the roofs is run into the wells, and badly constructed houses are crowded upon small areas. The people of Gurnard and of many other places in your District will have to pay heavily in the future for their immunity from control in the present.

Tinker's Lane.

Eleven years ago, if I am rightly informed, you adopted a scheme for bringing water to Tinker's Lane, and a tender for the work was accepted. Some reason for delay was found at the time, and the project has never been revived. But Tinker's Lane is as badly off for water as ever. Unfortunately no action can be taken to compel the proper storing of rain-water, because you are not certain that rain-water is a wholesome supply under the Act. Under sec. 299 P. H. A. 1875 you are in default as regards Tinker's Lane, Gunville, and other places. The houses unfit for habitation, of which there were several when I took office, are slowly disappearing from Tinker's Lane. Another of them has been recently destroyed by fire.

Horsebridge Hill.

It has taken a great many years to make Horsebridge Hill comparatively decent. The unauthorised sewer which emptied into the opposite ditch now discharges on to a meadow; but there is danger that slop water from cottages not connected with the sewer may cause a nuisance in the uncovered gutter above it. There are houses unfit for habitation at Horsebridge Hill. Two of these are about to be closed. Most of the houses have a very inadequate supply of rain-water. The Newport water main, which now supplies the Prison, should be continued as far as it is possible up the hill to a standpipe, from which the inhabitants may obtain their drinking water.

Medina Cement Works.

Complaints of the nuisance arising from the Cement Works are becoming more numerous as the works are extended. There can be no doubt that persons living on the eastern bank of the Medina, and more particularly the inhabitants of Whippingham, suffer considerable annoyance from smoke and from steam laden with sulphur and chlorine fumes. The amount of smoke may be diminished by more careful stoking; and I am informed arrangements are being made for erecting new kilns, in a chamber connected with which the chemical fumes will be to some extent condensed. The proprietors are anxious to diminish the nuisance as far as practicable. I trust they may be successful, and that you may not have to interfere with their important undertaking under sec. 91 P. H. A. 1875.

Parkhurst Prison and Barracks.

The sanitation of the Prison and Barracks are more satisfactory than I have hitherto known it. Both have Carisbrooke water laid on, and the sewage is now so effectually treated, as already described, that the effluent is comparatively innocuous. It is to be hoped enteric fever will be less known in these Government establishments in future.

Carisbrooke.

Carisbrooke stands on the edge of the Chalk. The High Street follows very closely the line of division between the Chalk and the Tertiary beds. On the north of it the few wells are supplied by soakage from the surface soil; south of this dividing line, yielding excellent water from the Chalk, are many wells, deep and shallow according to the elevation, the most important of which is that which supplies Newport with water. The mode of disposal of the sewage of the village must be a matter of the deepest concern to the owners of these wells, and more especially to the inhabitants of Newport. The majority of the houses drain into leaky cesspits, some of which are deep in the Chalk. With one exception, to which I referred in my last annual report, all the new houses drain in this manner. Thus a large amount of the sewage of Carisbrooke is discharged into the formation from which the drinking water of many of the inhabitants and of the population of Newport is drawn. There are at least three unauthorised sewers which empty into the stream, and for which you are responsible. One of these, which near the outfall is properly constructed of socketed pipes, is for the greater part of its length a leaking brick drain. It receives the sewage of some ten or twelve houses on the south side and one on the north side of the road in the lower part of the village. Another, a leaking brick drain, drains five or six houses on the north side of the highway. The third, similarly constructed, drains the churchyard, some stables, and Carisbrooke House, also on the north side. There is another drain which carries the sewage of six new houses to a cesspit, from which it overflows into the Chalk. In addition to these, the open road gutter, which is abominably offensive, receives the slop water of several houses, and at times other sewage, before it reaches the stream. Until quite recently people in your District and in Newport drank from the stream within half-a-mile of the outfalls of these sewers. I have referred in detail to the drainage of Carisbrooke, because as you have not taken powers to regulate the construction of new houses and their drainage, and as the sewers vested in your Authority are imperfect, drain but few of the houses, and pollute the stream, it is obviously your duty to remedy the existing faulty arrangements by providing proper sewers, when you can find a legal and convenient outfall. Mr. Baldwin Latham, the engineer of the Newport sewerage scheme, informed me he had, in preparing it, provided for such an outfall of the sewage of Carisbrooke into the Newport sewers. I would recommend you to invite Mr. Baldwin Latham to prepare a scheme for Carisbrooke, in order that the construction of sewers may go on concurrently in both places. You would probably have little difficulty in making arrangements with the Corporation of Newport under sec. 28 P. H. A. 1875, as it is of the first importance to Newport to avoid all risk of contamination of its water supply. If it was thought necessary by your Authority that Carisbrooke should be sewered some years ago, it must be increasingly so now since, in the absence of building bye-laws and regulations, houses have been huddled upon area in the Clatterford Road.

Gunville.

At the time there were cases of diphtheria in Gunville Back the drain from a laundry was diverted from the ditch to a cesspit in the garden; but this ditch continues to be the receptacle of the slops of many of the other houses. The old gutter nuisances continue. There ought not to be such a dearth of water at Gunville, with an independent supply running within half-a-mile of it.

Porchfield and Lock's Green.

Your obligations at Porchfield and Lock's Green may be best met, probably, by sinking a well beneath the Bembridge Limestone for the public use. It may be objected that the population is scattered; but it would be far better for the people to go a-quarter or even a-half mile for pure water, than to drink from the brooks and ponds fouled by cattle, or to send to a stream two miles off for water polluted with farmyard drainage and human excrement, as they do in Summer.

Shalfleet.

It is dangerous to drink from the stream at Shalfleet, but this is the source from whence many of the inhabitants of Shalfleet and the surrounding district obtain their drinking water. It is used at dairies, and yet cases of enteric fever may be traced to drinking from this stream. It is true only a fraction of the human sewage which entered the stream when I took office now goes into it, but the pollution is sufficient to give rise to disease. As I have so many times pointed out, your duty at Shalfleet would best be performed by boring a well on the slope of the hill east of the stream.

Calbourne.

As in almost every village in your District, improvements are slowly effected in Calbourne from year to year. Old privies are reconstructed, and many of them are converted into pail closets, foul drains are cut off from the streams and ditches, and pigsties are rebuilt and rendered more wholesome.

The sanitary condition of Calbourne is very different from what it was when I first knew it officially. The people drink from the stream, from surface wells, and from springs from the Chalk at the south of the village. There is a public well in the road near the churchyard, the water of which is thick and unpleasant, and is only used for "scrubbing down." It would be a simple and inexpensive matter to lead water into the village from the Chalk.

Newbridge. There are fewer filth nuisances at Newbridge than formerly. A great improvement has been effected on one property by reconstructing the privies and converting them into pail closets, and by increasing their number. The water supply is obtained from surface wells and the stream.

Ningwood. They use for domestic purposes at Ningwood rain-water and pond-water, or water from the little streams at each foot of the hill. The inhabitants are permitted by the kindness of Mr. Cottle to fetch their drinking water from the deep well at Ningwood House. This well, which is 100ft. deep, pierces the Bembridge Limestone, and the water is excellent.

Wellow and Thorley. Wellow and Thorley have good water where the wells reach the Bembridge Limestone. The public well by the roadside at Wellow should be protected and covered in, and a pump should be fixed.* It would be so simple and inexpensive a matter to effect these small improvements which, year after year, I have so strongly advised you to do. The old stone houses are somewhat damp, but they are substantial and in good order. The sanitary condition of the Rectory, which was very bad, has been much improved by the present Rector. A great improvement has been made, too, in the drainage of Thorley Farmyard, which has hitherto fouled a ditch at the back of the Rectory. The drainage arrangements of Thorley School are unsatisfactory, but they are to be altered.

Yarmouth. Yarmouth is progressing. Large plots of land in the centre of the town are about to be built over. Fortunately, in the absence of much needed building bye-laws, the houses are being constructed by a builder who is anxious to do what is right. Each year additional houses in Yarmouth are connected with the sewer. A serious nuisance on the foreshore at the back of Mill Terrace has at last been abated in this way. The Parochial Schools still drain on to the shore. If Yarmouth had an independent water supply, if its sewers were flushed, and if it possessed building bye-laws, and bye-laws for regulating slaughter-houses, and pig-keeping, its sanitary condition would be fairly satisfactory.

Freshwater. As I have so frequently pointed out, no place should be permitted to develop to the dimensions of a town, unfettered by the efficient control of the Sanitary Authority. Bye-laws of a stringent nature may be irksome to the individual, who makes it his business to oppose their adoption, but they benefit immensely the community at large. If they are applied without hesitation, and if the individual is compelled to do his duty, the people generally may be saved for many years the heavy rating which engineering works involve. These remarks apply with special force to Freshwater, where public sewers and an independent water supply will soon become absolute necessities. If the soil is of clay, as in the School Green district, it is difficult to obtain water, and filth accumulates on the surface; if the soil is porous, the filth is discharged into the subsoil from which the water is drawn. Freshwater badly needs an independent water supply. It may be readily obtained by sinking in the Chalk close to the Tertiaries, or from the springs at the head of the stream, which may be made to yield a more constant supply. For some years there has been a prospect of this work being taken in hand by a public company, and a scheme is still, I believe, under consideration; but it is always more satisfactory when the inhabitants of a place have sufficient enterprise to supply it with water themselves. The cost being less, the water rate is lower, and the supply is more generally used. In every case an independent water supply should be obtained before sewers are constructed; and, if it belongs to the people, it is more easily made available for flushing. To sewer Freshwater engineering difficulties of no ordinary character must be overcome, and the place is not strong enough to bear the expense; but it has been proposed that the Freshwater Gate district be drained by a sewer to empty into the Bay, into which sewage is already discharged from an unauthorised sewer, which should be lengthened considerably. It is scarcely necessary to point out that any such scheme would require most careful consideration, lest the interests of Freshwater, already prejudiced, should be still further compromised. I would venture again to call your very serious attention to the unauthorised sewers which exist at Freshwater, as well as in other parts of your District, and which must eventually force on prematurely the construction of a regular and proper system of sewers. As it ought to be, after so much inspection in connection with zymotic disease, the sanitary condition of Freshwater has improved. There were at the close of the year fewer obvious nuisances; there were more pail closets, and some of the houses had a purer water supply than at the end of 1887; but the necessity for building bye-laws, strictly enforced, is more urgent than it was a year ago. One cannot but dread the stimulation of building operations, which the opening of the railway will bring about, because there is no effectual control of the individual for the protection of the community. With such obvious natural advantages one regrets, too, that the prosperity of Freshwater will not be ensured by facility of access. Nothing but the application of all the powers you possess, or may possess, will secure that; and even if Freshwater felt itself strong enough to bear the additional expense of a Local Board, it is doubtful if as much would be done for the place, in a sanitary sense, as you could do for it.

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* This work has been ordered and is in progress.

Brooke.

Standing as it does upon the Wealden, Brooke has hitherto depended for its water upon soakage from the surface soil. Many of the houses, including some which are not on the Seely Estate, are now supplied independently from the Upper Greensand, the Brooke House supply having been continued to the village. Mr. Seely has effected another permanent improvement by carrying the stream at the end of its course through pipes, thus remedying a nuisance on Brooke Green, where the water stagnated, and at the neighbouring farm, the yard of which can now be drained.

Hulverstone.

The same owner by draining the piggeries at Hulverstone Farm has removed an old nuisance; and if the drain pipe is placed low enough, the nuisance in the yard behind Hulverstone Schools will have been permanently abated. The sanitary condition of the premises adjoining the schools has been greatly improved by removing and reconstructing the privy and pigsty. The Brooke water is not in sufficient quantity, probably, to supply Hulverstone, but it is possible a supply may be obtained from the Upper Greensand at the back of the hamlet.

Brighstone.

There are three sources of water supply at Brighstone: the polluted stream, badly stored rain-water, and, north of the Wealden, wells. The well water generally is hard, from excess of iron, and is scarcely fit for domestic purposes. A dip-well in the roadway near the Seely Reading Rooms contains good water, and would be more generally available if a pump were fixed. Practically the stream, which it is unsafe to drink from, is the mainstay of Brighstone for water. An independent supply may be readily obtained from the head of the stream, and it seems to be one of those cases in which it is the duty of the Authority to provide it under sec. 51 P. H. A. 1875.

Shorwell.

There is a pump off the road to the north of Shorwell; but surface water finds its way into the well. Shorwell could easily be supplied with water from the head of the stream, and at comparatively little cost. Two or three standpipes supplying Upper Greensand water would be of great benefit to the place. The district drained by the Shorwell stream is a clay district very badly off for water. I have frequently reported to you the inevitable pollution of this stream, and that its water is used for all purposes. Filtered rain-water should be carefully and properly stored in this district wherever practicable.

Chillerton and Gatcombe.

There is abundant water in those parts of Gatcombe and Chillerton which stand upon the Upper Greensand; but the wells are not protected, and they are liable to pollution in the porous soil. A well has been sunk and properly protected, a pump having been fixed, by the side of the road leading to the Down to the west of Chillerton, on the Seely Estate, which ought to be of great service to those living near.

The necessarily restricted outline of the prominent sanitary features of the more important localities of your District will serve to remind you that there is a great deficiency of water fit to drink in many places, and that the lives of the people are in jeopardy in consequence. Where supplies independent of the villages cannot be obtained at a moderate cost, public wells, as in old days, may often prove of great service. With the information we possess of the geologic strata, of the means of protection, and of the causes of disease, we may proceed in providing such supplies with a certainty of permanent success to which our forefathers, with their want of knowledge, could not attain.

Government Instructions to Medical Officers of Health.

In again bringing to your notice the instructions of the Local Government Board to the Medical Officer of Health in preparing his annual report, I would venture to point out that, in obedience to these instructions, I have in previous years called your attention to the conditions affecting health in your District and the means for improving those conditions. I have considered these subjects with reference to the future as well as to the past, and in giving an account of the sanitary state of the District generally at the close of each year, I have marked the point which has been reached in its sanitary state and administration, and I have indicated directions for further consideration and action. It is incumbent upon me at the close of another year to repeat in effect the advice previously tendered, notwithstanding you may have already expressed yourselves as opposed to its adoption. I do this with less reluctance, because any competent sanitarian as familiar with it as I am would take precisely the same views of the needs of your District; indeed, you have found the opinions of an able official of the Local Government Board, given after he had made a minute inspection of your District, supporting my reports and confirming my advice in almost every particular. I think the Government Inspector differed from me only with reference to the desirability of constructing sewers in the populous villages. My conclusions on this point were founded upon the hope and belief that more perfect sanitary control would be exercised over those places. I admit that as houses are crowded upon area, and population becomes denser, the alternatives of efficient sanitary administration, expensive engineering works, are inevitable. I cannot but regret the Committees appointed by your Authority to consider my annual reports have not seen their way to recommend you to adopt the majority of my suggestions, because I believe if they had fully realised the necessity of accepting the advice offered, and if your Authority had acted upon their recommendations, not only would increased prosperity have attended the greater confidence of the outside world, but the expenditure of large sums of money in the future would have been avoided or postponed. You have each year approved the recommendations of your Committee; but I would beg most respectfully to remind you those recommendations have not been acted on. Year after year they have advised the adoption of bye-laws, and that inquiry should be made and means taken to improve the water supply of your District, or of portions of it. The necessity of bye-laws is so often referred to at your meetings, and the opinion in their favour is so general among you, that it would seem the delay in applying for urban powers with a view to their adoption is due rather to your mode of procedure than to disinclination to act upon your convictions for the public good.

Procedure.

You meet as a Sanitary Authority after you have disposed of the less serious Poor Law business, and it appears to me to be physically impossible you can give that close attention to your sanitary duties which their importance demands, after sitting three or four hours as a Board of Guardians. As a matter of fact members leave, and at the close of the sanitary business there are often very few present. The time required for the consideration of the reports of the Inspectors, and of the various legal and other questions to which they give rise, renders deliberation upon policy and the general sanitary condition of your District very difficult. You are unwilling to delegate your sanitary functions to a Committee of your Board, as authorised by sec. 201 P. H. A. 1875, and as is done by many Authorities, and there are objections to almost every other suggestion for reforming your method of procedure; but possibly, if the sanitary business were taken first, or if the routine portions of the Inspectors' reports were taken by a committee earlier in the day, matters of importance being reserved for the general meeting of the Authority, time would be found for those larger questions of general policy which should occupy more of your attention.

Bye-laws.

It must be obvious to all that you are hampered in the performance of your administrative duties by all kinds of obstacles and legal difficulties. The Legislature evidently did not contemplate that such a district as yours could be administered efficiently by the clauses of the Public Health Act of 1875, which apply to rural districts alone, for otherwise sec. 276 P. H. A. 1875 would have no meaning. Probably there is no so-called rural district in the kingdom which more requires the exercise of urban powers than yours does. The Committee appointed to consider my annual report for 1887 were of opinion that "two sets of suitable bye-laws are desirable, one for populous places, and another for the purely rural districts." The difficulty in applying this recommendation lies in the definition of the districts within which the two sets of bye-laws would be applicable. In my opinion one set of bye-laws, such as the model bye-laws of the Local Government Board, may be applied to the whole of your District without injury to any legitimate private or vested interest. It is too much lost sight of that bye-laws would be valuable if only as a means of education. You require bye-laws sufficiently comprehensive for the protection of the public health, and the protection of the public health should be the first consideration. Anything less than this would be insufficient, and anything beyond this would be inoperative. Bye-laws are an expansion of the general law, and the general law applies to the whole country, but it is not put into operation indiscriminately. The object of all law is the control of the individual in order that his conduct may harmonise with the general well-being. If the tendency of the action of the individual is to cause the sickness and death of his fellows, it is the duty of the community, whose representatives you are, to restrain him absolutely. I am sure you will agree with me that as the Guardians of the public health you have not found the ordinary law sufficient to restrain the individual from inflicting wrong upon the community in all parts of your District, urban as well as rural, in the following among other matters: building construction, including house sanitation, unauthorised sewers, dilapidated houses, and houses unfit for human habitation, the keeping of pigs so as to be a nuisance, slaughter-houses, offensive trades, and gutter nuisances.

Examples of necessity for Bye-laws.

The question of bye-laws was so fully considered in my last annual report that I will not pursue the subject further than to give you two examples, drawn from recent experience at Freshwater, of what may happen when efficient sanitary control is not exercised.

1. Cases of diphtheria were present in certain cottages at the end of the year. The privy cesspits into which storm water entered were placed against the walls of the back rooms of the cottages. The filth soaked into the houses and sometimes flowed into the front rooms after rain.

2. Two pretentious looking semi-detached villas were certified by your Authority for letting three years ago. I was told the well water was sometimes discoloured, and smelt badly, and that the occupants were often "out of sorts." This was what I found when the drains were uncovered. Across the head of the well passed a socketed pipe drain intended to take the sewage of one of the houses, but which, apparently by an oversight, had not been connected with the closet. The pipes were of unglazed soft porous earthenware. In the middle of the portion crossing the well the collar of the pipe was broken, leaving a gap in the drain through which the sewage would have flowed had it been connected with the closet. Within a

foot of the well passed a drain composed of soft porous "but" or agricultural drain pipes. Some of these were broken, and pieces of slate had been placed to prevent the earth falling into the drain when it was filled in. This drain carried the sewage from the closet, and the slops from the scullery. The sewage flowed out between the pipes and saturated the earth over the well. The drain from the next house leaked in a similar manner, but it was not so close to the well. The drain from the first house passed to a cesspit within six paces of the well. That from the second house passed to a similar cesspit within six paces of the first one. Between the two cesspits was a rain-water tank. The cesspits had not been emptied for three years, which is equivalent to saying the contents leaked away into the porous soil from which the drinking water was drawn. As there were no disconnections or ventilation, the cesspits ventilated into the houses. I need scarcely add the houses are jerry built. It is right to say the owners of these two sets of houses did not require the pressure of your Authority to do what was necessary to render them fairly safe to live in. Now this is the sort of thing which has been going on in different parts of your District since I took office. I am compelled to recommend such houses for the certificate if the water is pure at the time it is applied for, and you are legally compelled to grant it. After the people are poisoned and your officers are called in something may be done. In the ordinary course such houses as these villas would escape the observation of the Inspector after they were occupied, unless his attention were specially called to them.

Bye-laws for Dairies, Cow-sheds, and Milk Shops.

You have reason to congratulate yourselves as a sanitary authority that you now possess the power to protect the public health in the control given you over the dairies, cow-sheds, and milk shops of your District. Under article 18 of the order of 1885 you may make regulations for the inspection of cattle in dairies, for prescribing and regulating the lighting, cleaning, drainage, and water supply; for the securing the cleanliness of milk stores and milk shops, and of milk vessels containing milk for sale; and for prescribing precautions to be taken by purveyors of milk, and persons selling milk by retail, against infection and contamination. Your Committee are of opinion that in your District, where, perhaps, there is a larger proportion of small dairies than in almost any other, cow-sheds and dairies are sufficiently protected by the Act and by the Order in Council affecting them. Of course it is the public who have to be protected against the disease and death which milk may bring them; and, although I differ in opinion from your Committee most unwillingly, I do not hesitate to say that, in my judgment, they are not sufficiently protected, either by regular and systematic inspections, or by the precautions taken by milk vendors, or the keepers of cows, more especially as regards the cleanliness of stables and the purity of the water the cows drink. One very obvious advantage of regulations is, that they teach people what ought to be done. The whole question is a most important one in your District, and to the towns supplied from it; and in the absence of regulations, the object of which is to prevent the occurrence of disease, I would strongly advise that all milk be boiled before it is used.

Bakehouses.

I think the bakehouses should be regularly inspected, and that secs. 15 and 16 of the Factory and Workshop Act, 1883, and secs. 3, 33, 34, and 35, of the Factory and Workshop Act, 1878, should be universally enforced in your District.

Inspection.

Your senior Inspector has done himself honour and your Authority credit by obtaining, after a thoroughly practical examination, the certificate of the Sanitary Institute of Great Britain. I would venture to urge his claims to your consideration, after seven years of diligent service. I am unable to report that the work of inspection is satisfactorily done, not because of any fault on the part of your Inspectors, but because they are unable to inspect systematically from house to house. As the allowance for travelling is quite inadequate, it takes them longer than it should to reach distant places in their respective districts; and as given nuisances remain so long on their books, they have to make long journeys every fortnight that they may report if there is any change in them.

The County Council.

It remains to be seen how far the reform of local government will benefit the interests of the public health. As yet the sanitary functions of the County Council are limited to a controlling and guiding power in sanitary matters over the local authorities; to the appointment of the County Analyst, and power of appointment of a Medical Officer of Health or adviser; and power to take action themselves under the Rivers Pollution Prevention Act, or to contribute to the costs of prosecutions under this Act instituted by any sanitary authority. The care of the health of the people is an enormous responsibility, and public opinion, which every day is becoming more educated in the importance of the questions bearing upon it, will support the County Councils in exercising their sanitary powers as these become enlarged.

I have the honour to be,
Gentlemen,
Your obedient Servant,
J. GROVES.

Carisbrooke.

APPENDIX.

REPORT ON THE WEATHER OF THE YEAR 1888.

ALTHOUGH the year which has just passed failed to exhibit so wide a difference between the Summer and the Winter mean temperatures as that which occurred in 1887, it was, nevertheless, not without many interesting features, some of them, perhaps, sadly so.

JANUARY was characterised by spells of both mild and of cold weather; but, although the latter were sometimes severe, the British Islands escaped much of the rigour to which the Continent generally was exposed. The thermometer in the shade at Durham is reported to have reached 63° on the 9th, a point never before attained in January in this country to the best of my recollection. This high and, possibly, somewhat doubtful reading did not occur again in any part of that district until after the close of April. At Newport the maximum temperature of the month was only 51°. On the 11th (the day of the Dakota "blizzard") the mercury at the summit of Ben Nevis reached 48°3, exceeding the highest temperature of *August* by 0°2. From the 8th to the 14th, inclusive, Clevedon was wrapped in a fog so dense and persistent that the sun was never once visible, or only faintly so for a few moments, during the whole of that time. The mean temperature was below the average in England, about equal to it in Ireland, and slightly above it in Scotland. The amount of rain was small.

FEBRUARY was cold and dull throughout, with frequent and heavy falls of snow. The mean temperature was 3° below the average in the northern and western parts of the Kingdom, 6° in the south of England, and 7° in the south-west. At Greenwich, from the 16th of the month to the 6th of March (20 days), the thermometer at night fell below 32°. The rainfall in London and the Isle of Wight was much below the normal quantity.

MARCH was a very cold month; and the rainfall was above the average in all parts of the United Kingdom. The mean temperature varied from 4° to 6° below the average.

April also was very cold, the mean temperature being 3° to 5° below the average over the British Islands. 66°, according to the Meteorological Office returns, was the maximum temperature recorded in any part of our archipelago. On the 9th the thermometer, even at Falmouth, fell to 29°. The precipitation during the month was about the mean; but at Clevedon there was nearly a fortnight during which the sun was rarely visible. This remarkable gloom has been largely reproduced on the Western Mendips during the present month (April, 1889); and the depth of rain at Loxton in the first eleven days has been as much as 2·56 inches.

With May a considerable improvement is associated: it was a very dry month, and the mean temperature was only slightly below the average in England and Ireland, while in Scotland it was about equal to it. At Greenwich the maximum temperature (76°8) exceeded that of July by 2°8. At Ventnor, Isle of Wight, it was the brightest month of the twelve, the total number of hours of clear sunshine being 256. The month was chiefly remarkable for the violent thunderstorm of the 18th and 19th. Coming up from the English Channel at about 8 p.m. of the former day, it travelled, at the rate of about fifty miles an hour in a N. by W. direction, till it reached the Firth of Forth by 4 a.m. of the 19th. At Glasgow the storm was of unprecedented magnificence, and rain and hail fell in torrents. This furious electrical outburst seems to have been a precursor of the wet and gloomy Summer that succeeded.

June commenced with showers of snow in parts of Scotland, and the night temperature fell below 32° in the northern part of the country. In London, however, the weather was charming, and the thermometer on the 3rd reached 87°6 at Greenwich Observatory. The mean temperature of the six weeks ended with the 9th of July was 3°5 below the average in the north of Scotland, and 2°2 below in the south-west of England. In London, on four consecutive days (17th to 20th), the mercury did not advance beyond 55°. At Newport the lowest temperature was 36°, only 2°2 higher than that of November, and 9½° below the Greenwich minimum for June. The type of weather was cyclonic; and on the 25th a violent thunderstorm passed over the Bristol Channel at Clevedon, striking objects at several points of its course. By the end of the month vegetation (if we may judge by the flowering of certain plants) had recovered much of its arrears. On the mean of various districts of the United Kingdom, the ground-ivy *(Nepeta glechoma)* was in flower by the 19th of April, or eighteen days behind time. The germander-speedwell *(Veronica chamædrys)* put forth its first flowers on the 5th of May, being a fortnight late. The hawthorn *(Cratægus oxyacantha)* did not snow upon the hedges until the 23rd of May, nearly a week after its usual time. The dog-rose *(Rosa canina)*, however, was only five-and-a-half days over due, its average first appearance being on the 15th of June; while the yellow bedstraw (*Galium verum*) still further reduced the arrears to three days, and blossomed on the last day of the month. It must be remembered, however, that the mean date of the first flowering of plants is based upon a short, and therefore somewhat unsatisfactory, series of years.

July was an extraordinary month. I can recollect the time when snow in April and October came to me as a great surprise, but it was reserved for 1888 to record the appearance of that beautiful meteor during the seventh month of the year. Snow actually fell on the 11th, and as far south as the Isle of Wight, though, presumably, it did not whiten the earth. The month generally was dull, cold, and wet, and grass frosts occurred nearly everywhere at times. The highest temperature at Greenwich was only 74°, a lower monthly maximum than any that took place during the series 1841-87; and the corrected mean temperature of every day during the month was below the average of twenty years. The corrected mean temperature of the 11th and 12th was only 49°, and the Greenwich registers of seventy-five years fail to show another instance of such unseasonable cold on two consecutive July days. The plain arithmetical mean of the two days was 50°3, according to figures supplied by Mr. Charles Harding, F.R. Met. S., this value being probably about 13½° below the average. At Falmouth the thermometer never reached 66°, and the maximum temperature was only 9°1 higher than that of December. In some places the nights were occasionally intensely cold: at Cheltenham on the 13th the minimum temperature was 36°2, and at Marlborough 35°3. The fall of rain was prodigious, and at Greenwich amounted to six inches and three-quarters. On the 6th, at Babbacombe, Torquay, 1·47 inch of rain fell in half-an-hour, in the severest thunder and hail storm ever known, it is said, in that district. If this violent downpour had continued without cessation for a year over the county, suffering no loss from percolation, evaporation, and drainage, the highest tor of Dartmoor would have been submerged before the expiration of the period. The total fall for the day was very nearly two inches. On the 30th 3·17 inches fell at Deptford, and on the 31st 3·4 inches at St. Leonard's. At Berkhamsted, in Herts, the average daily duration of bright sunshine was only two hours and forty minutes; at Ventnor it was three hours and twenty-three minutes, being actually *less than that of February*.

August was a dull and cheerless month, and the mean temperature was 2° or 3° below the average over the United Kingdom. Notwithstanding this fact, the highest temperature of the year occurred at Greenwich on the 10th, and reached 87°7. At Princetown, Dartmoor, the rainfall of July and August (combined) was 21·24 inches; the number of wet days was fifty-two. At Ingatestone, in Essex, 3·2 inches of rain fell in the twenty-four hours ended at 9 a.m. of the 2nd; but this amount is quite eclipsed by the amazing quantity (4·56 inches) which occurred at Romford on the 1st. At Greenwich the mean temperature of the Summer (June to August) was 59°7, or 2°6 below the forty-eight years' average; while the total rainfall of the season (13·84 inches) was as much as 102·6 per cent. above the mean of the same period. At Buxton on the 17th the minimum temperature was 35°8.

September, fortunately, was bright and dry; and, although the mean temperature was below the average over the British Islands by from 1° to 3°, there is little doubt that the fine weather which took place during the month did much to prevent the harvest from becoming a total failure. At Ventnor the number of hours of bright sunshine was over 208, notwithstanding the rapidly shortening days. This value is the second in order of the twelve. The following table, which has been compiled from a paper read by Mr. C. Harding, shows the mean temperature of the twelve months ended with September, 1888, and the departure of mean temperature from the average, &c. :—

District.	Mean Temp. (not reduced to the Sea-level.	Mean Temp. below the average of 1867-88 by	Remarks.
	°	°	
North Scotland	43·4	2·3	Twelve months ended with Sept., 1881, 0° 3 colder.
West „	45·6	2·0	1879 was 0° 3 colder.
East „	44·1	2·6	1879 was 0° 4 colder.
North-West England....	46·1	2·2	1879 was 0° 3 colder.
North-East „	45·1	2·1	1879 was 0° 2 colder.
East „	46·1	2·2	1879 was the same.
Midland Counties of England	45·8	2·6	No year so cold in the series 1867-87.
South England	47·1	2·2	No year so cold.
South-West England....	47·2	3·2	No year so cold.
North Ireland	46·6	1·6	1879 was 0° 8 colder.
South „	47·8	2·0	1879 was 0° 1 colder.
Channel Islands........	49·7	1·4	———
British Islands generally	46·2	2·1	1879 was the same.

Notes.—Allowances have not been made for differences of area in calculating the mean temp. of the British Islands generally. The mean temp. of the last ten years having been much below the average, that of 1867-88 must be injuriously affected thereby. The highest mean for the British Islands generally nearly touched 50° (49° 9) in 1868: and there were five years in which the mean temp. equalled or exceeded 49°.

October commenced with very cold and unsettled weather. Sleet and snow fell at many northern stations, and on the morning of the 2nd the Malvern Hills were white. If this fall had taken place only two days earlier, the strange spectacle of an English hill-range under snow in the month of *September* would have been presented to the gaze. The mean temperature of the week ended the 8th was 12° below the average in Eastern England, and 11° below in the Midlands and in Southern England; in Scotland and in Ireland it was only 6° or 7° below. In London the thermometer fell to 32° or below that point on six consecutive nights (5th to 10th). The Greenwich observations from 1841, inclusive, show only four years that were distinguished by frost during the first ten days of this month (1849, 1853, 1867, and 1877), and there is no previous instance of the occurrence of more than two consecutive frosty nights so early in the season. From September, 1887, to October, 1888, *every* month was cold, and the Greenwich mean temperature of the fourteen months ended with the 31st of October was only 47°9, or 2°8 below the forty-eight years' average. This signifies that during the period mentioned Greenwich was *practically* removed 200 or even 250 miles nearer the North Pole. The first ten days of the month were remarkable for a corrected mean temperature of only 43°4 (the lowest on record for that portion of the year), but the last week of the month was exceedingly warm, and indeed was the warmest of all the corresponding periods ever noted, its Greenwich corrected mean temperature being 55°, or 8°2 above the average of 1814-73. The nearest approach to so high a mean occurred fifty-five years prior to 1888, and the value on that occasion was 54°. The 27th and 28th of the month were considerably warmer than an average June, their corrected mean temperatures being respectively 61°1 and 60°2. A maximum temperature of 70° took place at one or two places in England. At Babbacombe the simple mean temperature of the last week was 55°1, and that of the five-day period from the 25th to the 29th was as high as 57°, or about equal to the Greenwich value for the end of May. The lowest temperature of the 26th and of the 28th was 56°; that of the 27th was 58°. The rainfall of the week amounted to 1·42 inch. The mean temperature of October over the whole of England was from 1° to 5° below the average. In the south-west of England there was not a single warm week between the 12th of March and the 22nd of October (32 weeks). There were but four warm weeks during the whole period of 13½ months (6th September, 1887, to 22nd October, 1888) in the north-west of England, and only five and six warm weeks respectively in the south-west of England and in the Channel Islands. At Greenwich during the fourteen months ended with October, 1888, there were 312 days whose corrected mean temperature was below the average of twenty years, and only 115 days whose mean was above the average of that period. The rainfall of the month was considerably in defect in the south of England.

NOVEMBER was mild, wet, windy, and dull, with one short interval of cold, during which, on the 7th, snow fell on the Western Mendips for the first time of the season. At Ventnor it was the least sunny of the twelve months, and the average daily duration of bright sunshine was only 50 minutes. The 16th was remarkably mild, its mean temperature being 55°8 at Clifton and 56°5 at Geldeston in Norfolk. At Babbacombe the mean temperature of the month was 49°2; the minimum temperature was only thrice below 40°; while thirteen maxima equalled or exceeded 54°. At Falmouth the thermometer did not descend below 40°9, being only 2°3 below the minimum temperature of June. At Newport the mean temperature of the month was actually one degree and a third in excess of that of October, due chiefly to the warmth of the nights. The total rainfall was 8·52 inches at Babbacombe and 6·53 inches at Clifton. On the 25th I gathered three fully opened wild primroses at Winscombe, Somersetshire, and others have been seen continuously since that date, save, perhaps, during very short intervals. As the supply will probably be maintained until the end of May or the beginning of June, it is probable that the plant will have been in flower during seven or eight consecutive months, having regard only to the *names* of the months and during 6 or 6½ months, reckoning from date to date.

DECEMBER was characterised by spells of mild and of cold weather, the former predominating, at least in the south of England, for the adopted mean temperature at Clifton was 1°5 above the average, and at Newport the mean was precisely equal to that of April. On the morning of the 4th, London was 5° warmer than Naples, 7° than Monaco, 9° than Laghonat (Central Algeria), 11° than Constantinople, 12° than Bordeaux, 14° than Marseilles, 16° than Rome, 17° than Madrid, and 19° than Paris. [The hour of observation is 7 a.m. in France, (including Algeria), Italy, Austria, and Russia, and 8 a.m. in the other countries of Europe.] On the 5th the thermometer in London reached 58°, a point which it had not attained in December for fifteen years. The rainfall of the month at Greenwich was considerably below the mean. At Winscombe myrtle-blossom was last noticed on the 11th, but it was then only in a half expanded condition. I now append a table giving some meteorological particulars respecting 1888 for Falmouth, Newport, Greenwich, and the summit of Ben Nevis in Scotland:—

Months, 1888.	Falmouth.							Newport, I.W.							The Royal Observatory, Greenwich.							Ben Nevis.	
	Max. Temp.	Min. Temp.	Mean Daily Max. Temp.	Mean Daily Min. Temp.	Mean Temp.	Depth of Rain.	No. of Days on which Rain was 0·01 in. or more.	Max. Temp.	Min. Temp.	Mean Daily Max. Temp.	Mean Daily Min. Temp.	Mean Temp.	Depth of Rain.	No. of Days on which Rain was 0·01 in. or more.	Max. Temp.	Min. Temp.	Mean Daily Max. Temp.	Mean Daily Min. Temp.	Mean Temp.	Depth of Rain.	No. of Days on which Rain was 0·01 in. or more.	Max. Temp.	Min. Temp.
	°	°	°	°	°	in.		°	°	°	°	°	in.		°	°	°	°	°	in.		°	°
Jan. ..	55·5	26·5	46·4	39·3	42·9	2·34	15	51·0	19·9	43·5	33·8	38·7	1·26	11	51·0	22·1	41·6	33·6	37·6	0·89	11	48·3	9·2
Feb. ..	53·5	24·0	42·0	33·9	38·0	1·13	9	52·8	18·1	40·4	30·6	35·5	0·81	10	50·8	18·4	39·3	30·8	35·1	0·89	15	35·6	9·9
Mar. ..	52·8	27·3	46·0	36·2	41·1	5·27	21	51·4	20·5	44·7	33·4	39·0	3·97	20	56·5	25·4	44·4	33·0	38·7	2·78	21	34·2	7·0
April ..	56·7	29·0	49·6	40·2	44·9	1·63	16	59·0	27·8	50·4	37·5	44·0	1·42	15	67·7	26·3	52·6	36·3	44·4	1·51	14	35·5	13·8
May ..	66·1	37·1	57·0	46·4	51·7	1·46	11	70·0	30·4	61·0	42·7	51·8	1·87	9	76·8	33·8	64·7	42·6	53·7	0·65	5	49·9	19·1
June ..	71·9	43·2	61·6	51·1	56·3	3·20	16	80·1	36·0	65·2	49·5	57·4	2·28	17	87·6	45·5	69·3	49·9	59·6	3·36	15	62·2	23·7
July ..	65·7	46·6	62·4	52·9	57·7	5·71	25	70·4	40·8	65·1	52·5	58·8	4·63	23	74·0	42·8	67·2	51·5	59·3	6·75	26	55·9	25·6
Aug. ..	67·7	48·1	63·6	53·6	58·6	3·16	16	80·0	43·0	66·8	52·4	59·6	1·83	13	87·7	45·2	69·4	50·9	60·2	3·73	12	48·1	28·9
Sept. ..	65·7	44·3	60·8	51·1	56·0	1·34	11	74·8	37·1	65·7	47·7	56·7	0·94	10	74·0	38·5	65·3	48·3	56·8	0·73	12	58·8	21·0
Oct. ..	61·8	38·3	56·0	46·9	51·4	2·57	17	65·0	25·0	56·2	38·8	47·5	2·21	11	68·4	27·9	55·2	37·7	46·4	1·30	6	51·9	16·2
Nov. ..	57·2	40·9	53·8	46·6	50·2	7·29	25	57·1	33·8	52·8	44·9	48·8	5·49	23	59·4	33·5	51·5	42·7	47·1	4·00	18	39·0	18·0
Dec. ..	56·6	30·9	50·5	43·0	46·7	4·05	18	58·8	27·0	48·3	39·6*	44·0*	2·31	17	58·1	24·8	45·6	35·6	40·6	0·92	10	41·3	15·8

NOTES.—The Babbacombe Observer remarks that the adopted mean temp. of the year was 1° 7 below the average. The annual precipitation was 1·38 in. below the mean amount. At Greenwich the simple mean temp. was only 48° 3, and that of the ten years 1879-88 was nearly one degree (over 0° 9) below the 48 years' average. At Ventnor the total number of hours of bright sunshine during the year was 1448½; in 1887 it was 1916¼.

* Approximate value.

In conclusion I may now observe that at Clifton the adopted mean temperature of the three months' Winter (December to February) of 1888-89 was 0°6 below the average, and of the four months' Winter (December to March) also 0°6 below the average. The three months' Winter was 2°5, and the four months' Winter 2°4, less severe than that of 1887-88.

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